Fort Reliance, Yukon: An Archaeological Assessment

by Donald W. Clark

Mercury Series
Archaeological Survey of Canada
Paper 150

published by
Canadian Museum of Civilization

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CANADIAN CATALOGUING IN PUBLICATION DATA

Clark, Donald W.
Fort Reliance, Yukon: an archaeological assessment

(Mercury series, ISSN 0316-1854)
(Paper/Archaeological Survey of Canada,
ISSN 0317-2244; no. 150)
Includes an abstract in French
ISBN 0-660-14032-2

1. Fort Reliance (Yukon).
2. Indians of North America — Yukon Territory — Antiquities.
3. Excavations (Archaeology) — Yukon Territory.
4. Northwest, Canadian — Antiquities.
I. Canadian Museum of Civilization.
II. Title.
III. Series.
IV. Series: Paper/Archaeological Survey of Canada; no. 150.

E99.H26C52 1995 971.9'01 C95-980029-8

PRINTED IN CANADA

Published by
Canadian Museum of Civilization
100 Laurier Street
P.O. Box 3100, Station B
Hull, Quebec
J8X 4H2

PAPER COORDINATOR: Richard Morlan

HEAD OF PRODUCTION: Deborah Brownrigg

COVER DESIGN: Purich Design Studio

Canada

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Abstract

Fort Reliance was an Alaska Commercial Company trading post and traditional Han Indian centre during the nineteenth century. The American trading post was established in 1874 and abandoned at the end of the 1885-86 trading season. Initially founded by François Mercier as a small, semi-independent fur trading post, Fort Reliance later served the first prospectors in the Fortymile-Klondike region. This location, ten kilometres down from which other localities were designated according to their river distance from the trading post, along the Sixty Mile River, for instance. Many Yukon pioneers spent time at Fort Reliance, among them Leroy "Jack" McQuesten, Alfred Mayo, Joseph Ladue, Arthur Harper, and William Moore.

The Canadian Museum of Civilization tested the site in 1983 and did further work there in 1991. The objectives of the investigation were to determine and assess the nature and extent of archaeological remains, and to determine the relationship between Native use of the site, previously known through the recovery of a few stone artifacts, and the trading post. Surface features were recorded and numerous test pits were excavated both within structures and in open areas. An attempt was made to determine the structural features of an enigmatic series of semisubterranean houses.

The results show that there was Native occupation of the site prior to and during the 1874-1886 duration of Fort Reliance. The semisubterranean structures belong to the period of the trading post though they were occupied by the Han or visitors from other Indian groups. Due to poor preservation, some details of these structures could not be determined through partial excavation of the house pits. Artifacts of European and Native origin were found on structure floors and in soil layers and feature pits located outside the structures.

Resumé

Fort Reliance était un poste de traite de l'Alaska Commercial Company et un centre traditionnel des Hans au XIX^{e} siècle. Le poste de traite américan a été établi en 1874 et abandonné, à la fin de la saison de traite, en 1886. Fondé par François Mercier, ce modeste poste de traite de fourrures, semi-indépendant, allait plus tard servir aux premiers prospecteurs dans la région de Forty Mile et de la rivière Klondike. Fort Reliance, à dix kilomètres en aval de l'embouchure de la rivière Klondike, devint le point de référence (ou le point zéro) à partir du quel les autres emplacements furent désignés, selon la distance qui les séparait de ce poste de traite. De nombreux pionniers du Yukon séjournèrent à Fort Reliance, dont Leroy «Jack» McQuesten, Alfred Mayo, Joseph Ladue, Arthur Harper et William Moore.

Le Musée canadien des civilisations a sondé l'emplacement en 1983 et y a effectué d'autres fouilles en 1991. Son but était de déterminer la nature et d'évaluer l'ampleur des vestiges archéologiques, ainsi que d'établir entre l'occupation du site par les Autochtones - déjà connue grâce à la découverte de quelques objets de pierre - et le poste de traite. Des structures visibles en surface ont été consignées et de nombreux sondages ont été réalisés, aussi bien à l'intérieur qu'en dehors des structures. On a essayé de déterminer les aussi bien à l'intérieur qu'en dehors des structures. On a essayé de déterminer les caractéristiques de construction d'une énigmatique série de maisons semi-souterraines.

Les résultats ont démontré que les Autochtones avaient occupé le site avant et pendant la durée de Fort Reliance, de 1874 à 1886. Les structures semi-souterraines datent de la période du poste de traite, mais elles étaient habitées par les Hans et des visiteurs d'autres groupes amérindiens. Le mauvais état de conservation a empêché de déterminer certains détails de ces structures au moyen de l'excavation partielle des fosses. On a trouvé des artefacts d'origine européenne et autochtone sur les planchers des structures ainsi que dans les couches de sol et dans les fosses situées à l'extérieur des structures.

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CHAPTER 1: INTRODUCTION

1.1. HISTORICAL VIGNETTE

August 1874: The uncertainty of past weeks suddenly left François Mercier as Catseh, chief of the Klondike Han (Tro'dëk Huchan) pointed to the well elevated wooded riverbank ten kilometres below the mouth of the Deer River (Fig. 1.1, 1.2, 2.1). Here was an ideal location for his new trading post, Fort Reliance, at the old Indian camp site. The tiny steamer *Yukon* was drawn up to the shore; the crew helped clear the site; then a few days later they cast off to return down river, leaving Leroy "Jack" McQuesten--and his assistant to erect the cabins, with the help of local Indians, and prepare for the coming fur trade.

Behind the founding of Fort Reliance is a story of competition between the Russian American Company and Hudson's Bay Company for the fur trade of the Yukon Valley, and the subsequent ascendency of the Alaska Commercial Company when the United States purchased Alaska in 1867. Two years later, in 1869, the Alaskan company took over Fort Yukon, which was well within Alaska, while the Hudson's Bay Company withdrew up the Porcupine River to the Ramparts. Most of the future Yukon Territory and part of eastern interior Alaska was without a trader. The Alaska Commercial Company moved to fill this void.

Fort Reliance brought a United States trading firm, with its mode of operation and line of goods, into a region previously served by a British company. Too, the new company was the successor of a Russian one and many of its employees were of Russian-Native parentage. But also prominent among company employees and semi-independent traders were many who traced their patrimony directly or indirectly to Quebec and Ontario, the Mercier brothers among others. As if this operation in a land that hardly knew international boundaries could be any more multinational, the clients of Fort Reliance during its first years were the local Han, Upper Tanana and Northern Tutchone Indians.

More than just being a new player on the River, the American company was part of the opening up of the country concomitant with the changing post Civil War era, with new technology, now including steamboats in the north, and the unbinding of old political and commercial constraints and monopolies that in the past had relegated people to being part of quasi-governmental commercial machines. At the close of the Fort Reliance era this process would run away with itself to the chaotic cry of "gold!", but that was hardly foreseen in the years of the Reliance story when men were fulfilling their lives, completing their missions, and leaving the scene just as the golden sun was rising on another breed of northerners. These years were, in A.A. Wright's words, the "Prelude to Bonanza" (Wright 1976).

For many winters the trader, sometimes with a prospector partner such as Harper or Ladue, was the only person of his race living in countless thousands of square miles. Then, beginning about 1882, increasing numbers of prospectors and miners started coming overland through the rugged passes from the coast of Alaska. At first Fort Reliance was not a food depot and could not sustain the few prospectors who penetrated that far inland, so most left the country at the end of each summer. Some overwintered at or near the post in 1882-83 and in 1884 McQuesten began to change the focus of the post from trading furs to servicing the prospecting and mining industry. The miners who built cabins and overwintered there had a base from which to search more intensively during longer seasons. Placers on the Stewart River were becoming productive, more miners arrived, and at the end of the spring 1886 trading season McQuesten, Mayo and Harper moved to the mouth of the Stewart River. That was the end of Fort Reliance, but prospecting 40 miles below the old post continued and finally paid off that winter with a major strike in the Fortymile country (De Armond 1973, Gates 1994). By 1887 the remains of Fort Reliance were being scavenged for wood for steamer boilers (saving the effort of cutting and limbing trees) now that the Fortymile rush was on.

Robert Campbell had explored the upper Yukon drainage, and had established a trading post at Fort Selkirk in 1848, but he was ousted by coastal Indian traders in 1852. After that, Fort Reliance was the first trading post in the upper Yukon watershed above Fort Yukon (Table 1.1), and during most years of its existence it was the only trading post. Its importance to the initial opening-up of the country is memorialized by the fact that places were identified according to their distance from Fort Reliance, as is still found in such names as Sixtymile, Fortymile, Fifteenmile, and Sixtymile River.

Fort Reliance also was a Han Indian settlement, prior to and during the tenure of the trading post. Native occupation of the site largely ceased when the trading post closed, judging from the archaeological tests, but there was some camping there, probably by both white prospectors and Natives, at the end of the 19th century or the beginning of the new century. Fort Reliance served the Han Indians of the Yukon and Alaska, and as well, directly or indirectly but not exclusively, the Northern Tutchone and Upper Tanana neighbours of the Han as well as occasional visitors from more distant tribes. Stone tools and other traces found in deposits underlying or mixed with those of the trading post occupation probably are from late-precontact Han occupation of the site. This people also had a summer or salmon fishing village, Nuclaco, on a small island directly across from the trading post.

Formerly the Yukon drainage was partitioned into two trading spheres, that of the Russian American Company extending approximately to the mouth of the Tanana River and the Hudson's Bay Company going down to the mouth of the Tanana but overlapping because of the peregrinations of Natives looking for the best market. Now most of the region was largely encompassed within a single trading network, though the Husdon's Bay Company still operated on the Porcupine River, at Rampart House. There also was an inland trickle of goods through Native traders from the Pacific, Bering Sea and Arctic coast of Alaska and western Canada.

TABLE1.1. TRADING POSTS OF THE UPPER AND MIDDLE YUKON DRAINAGE TO 1890s

Location	Date	Name	Company, Notes
E side Yukon above Pelly mouth, moved to W side in 1852	1848-1852 1889-1894 or 1896	Ft. Selkirk "Campbell's Fort"	Hudson's Bay Co. ACCo independent (Harper)
Mouth of Sixtymile River	1894-1896, 1892-1893?	Sixtymile, Ogilvy	A. Harper, J. Ladue; moved to Dawson
Mouth of Stewart River	1886-1887	Ft. Nelson	ACCo independents (McQuesten, Mayo, Harper), moved to Fortymile after 1 season
E Side Yukon 10 km below Dawson	1874-1886	Ft. Reliance	ACCo independents (McQuesten, Mayo, Harper, Ladue), moved to Ft. Nelson
W side Yukon at mouth Fortymile	1887--- 1893-1898	Fortymile Ft. Cudahy	ACCo indepen. (McQuesten, Mayo) NAT&Tco (John Healy)
Eagle, David's Village & vicinity	1880-1882	Belle Isle	Western Fur & Trading (F.Mercier & others, M. Mercer unconfirmed in 1874 also as Belle Isle)
	1882-1886?	Belle Isle Camp David Fetulin	ACCo independents & others, 2 competing posts 1882 (Mercier, Harper, others)
Porcupine R. just inside Alaska	1869-1889?	(old) Rampart House	HBC, moved to (new) Rampart, finally abandoned in 1894
Near mouth Rat R., Bell River	1843-approx 1900	Lapierre House	Hudson's Bay Company
Porcupine & Yukon River confluence	1847-1869 1869-1880?	Ft. Yukon Ft. Yukon	HBC, moved to (old) Rampart ACCo, ACCo independents (M. & F. Mercier, McQuesten, others; in 1880s an itinerant stop.
Different location same vicinity	1890s	Ft. Yukon	Minor post present in 1893
Confluence of	---1868	Nukelakayet	Itinerant Russian HBC and Native

Location	Date	Name	Company, Notes
Yukon R. and Tanana, west to mouth of Tozitna R.*			rendezvous point
	1869-1870	Tanana Sta.	ACCo (F. Mercier), 3 mi below mouth of Tanana River
	1868-1895	Nukelakayet Old Station American Sta. Ft. Adams Harper's Sta.	Pioneer and Perrotte Co. (F. Mercier) merged with ACCo 1870 Loc. just below mouth of Tozitna (Mercier, Harper, McQuesten, Walker, Mayo, Bettles, others)
	1877-1883	Ft. Mercier	Western Fur & Trading (Mercier), loc. between Tanana Sta. & mouth of Tozitna. WF&T closed, buildings moved to Nukelakayet.
	1895---	Mayo's Landing Tanana	Bettles and Mayo reestablished across from mouth of Tanana c 25 km above their old location.
Across from mouth of Nowitna River	by 1874 to after 1900	Kokrine	ACCo independent? (Kokerine)
Lower Tanana R.	1878	---	ACCo independent (Bean), closed when Indians shot trader's wife.
100 mi up Tanana	1880-1881?	Short Station	ACCo independent (A. Harper)
Nulato and vicinity	1838	---	Temporary, burned while unoccupied.
	1840-1868	Nulato	Russian American Company, destroyed once by Koyukon
	1868---?	Nulato	ACCo & ACCo independents
	1870s	Ft. Kennicott	WF&Trading Co. (Napoleon Robert)
	Late 1870s ---1880s	Nulato	ACCo & various traders, at times closed or itinerant trade point during period of Native-trader hostility.

* Tanana to Tozitna: see the thoroughly researched and detailed study by Turck and Turck (1992) for the complex history of trading posts in that area.

Similar goods, drawn from the Alaska Commercial Company depot at St. Michael, Alaska, which in turn drew heavily on merchandise warehoused at San Francisco, were available throughout this region. Alaska Commercial Company goods likely differed from those offered by the Hudson's Bay Company, in ways as yet to be fully documented. There also must have been differences between the Fort Reliance inventory and that earlier carried by the Hudson's Bay Company at Fort Yukon, which occurred because of the difference between the years when the posts were

operated during a period of rapidly changing technology. A notable distinction between the two companies was the mode and routes of communication or supply. Fort Reliance was supplied by small steamers that ascended the Yukon once a year, while until late in the century the Hudson's Bay Company was supplied by overland routes that extended through Canada, requiring years to complete a cycle or "outfit."

1.2. LOCATION

Fort Reliance existed at a single location only, which makes its study less confusing than that of many historical trading posts that often were shifted to new locations without any change in name. (But Fort Reliance is not to be confused with one of the same name located near Great Slave Lake in the Northwest Territories.) When the traders Harper, Mayo and McQuesten moved to the Stewart River in 1886 and to the mouth of the Fortymile River in 1887 they did not take the old post's name with them. The site of Fort Reliance is on the right (east) bank of the Yukon River, 11 km below the mouth of the Klondike River (Fig. 1.1 -- 1.4). Statements placing Fort Reliance elsewhere seemingly have arisen through the common confusion between "up south" and "down north" in reference to river directions.

1.3. THE ARCHAEOLOGY PROJECT

1.3.1. Previous Research

The only research pertaining to the history and ethnohistory of Fort Reliance that has come to my attention is linguistically-based place name research by John Ritter on the Han settlement "Nuclaco" (J. Ritter personal communication). Although a number of authors have visited the site (for example, Wharton 1972), descriptions are meagre.

Richard S. MacNeish of the Canadian Museum of Civilization (then Human History branch of the National Museum of Canada) briefly visited the site in 1957 (MacNeish 1964). Four small, neatly cut rectangular pits at the inner margin of the site may be MacNeish's, but MacNeish was unable to verify this when queried by the author in 1993. In the LaVk-1 (Fort Reliance) collection at the Canadian Museum of Civilization, numbers 1 through 20 are attributed to MacNeish. These items include chert flakes, fragments of calcined bone and a single clay pipe fragment.

Jeff Hunston inspected the site in 1973 and again in 1976 and made a collection from bank exposures and from a disturbed surface area. (Hunston first saw the site about 1966/67 while on a school excursion led by Ed Jones of Dawson. Jones had collected beads and other items from the surface and in 1967 authored an article on McQuesten which briefly describes Fort Reliance. The disposition of this collection is not known.) Hunston's collection at the Canadian Museum

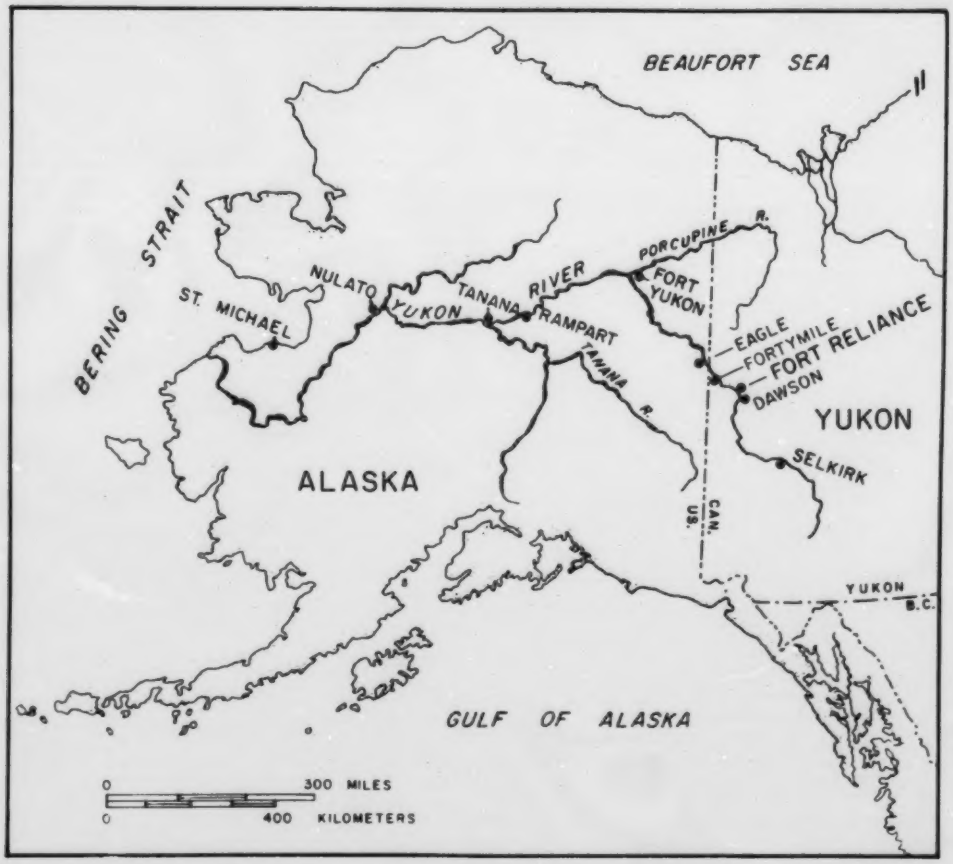


Figure 1.1. Map of the Yukon drainage showing the location of nineteenth century settlements. Rampart in Alaska is different than the Rampart House posts on the Porcupine River.

of Civilization (LaVk-1: number 21 through 73) includes chert flakes, an end scraper, 4 cut nails, a cut metal piece (can opener fragment?), at least 4 clay pipe fragments, 2 shot pellets, a 16-gauge Winchester cartridge case head, 12 ceramic sherds (white, painted and transfer print), more than 200 beads of seed and larger sizes and a piece of native copper (Hunston 1975, 1976). These will be referred to as the "pre-1983 collection." In 1976 Hunston noted a hearth eroding out of the gully bank at the south end of the site. In 1983 this area was becoming overgrown, in 1991 it was thoroughly overgrown, and no cultural material was seen there.

In 1976 Sheila J. Minni examined surface features at Fort Reliance in the context of a Klondike historical sites survey by Parks Canada (Minni 1977, 1978). Minni (1978:134-35) reported in summary manner seven of the structural features described in the present report and

Figure 1.2. Fort Reliance and vicinity, from the Dome behind Dawson City. The islets, probable location of Nuclaco, across from the site of Fort Reliance ("R", refer to Fig. 1.3), are visible in the photograph.

noted the presence of uncommon debris on the surface, mainly metal cans. No collection was made. She recognized the main building on the site and hypothesised that the four semisubterranean structures were used for storage. Pointing to the historical importance of the site, Minni recommended future archaeological investigation.

There have been numerous surveys and heritage inventories at Dawson and in the greater vicinity orientated towards either the Klondike Gold Rush, prehistoric sites, or Native history. However, most of these investigations have been either topically or geographically remote from Fort Reliance. Closer to the site are Hunston's excavations at Moosehide in precontact deposits demonstrating intermittent occupation there over the past 8000 years (Hunston 1975, 1976, personal communications). A site at Deadwood Creek, across from Moosehide, also was briefly tested in 1969 by David Stothers, a University of Toronto student, and further tested by Hunston in 1974 Hunston (1975). It yielded a small number of lithic artifacts, including microblades (which indicate an antiquity of several thousand years) and a side-notched point. The banks of the Yukon River, from Dawson to the boundary, have been surveyed twice by Hunston in 1973 and 1974 and by the writer in 1991, but with relatively modest results as to the number and extent of Native sites. During the initial work in the area MacNeish had surveyed as far down the Yukon as the Chandindu tributary (Twelve Mile River). Andrews' excavation of dwelling floors near Eagle, Alaska, provides a comparative perspective from a site that is essentially the same age as Fort Reliance, and was supplied by the same trading firm (Andrews 1986; see also Shinkwin, Andrews, Sackett and Kroul 1978).

1.3.2. Present Project

Reports by Hunston and Minni (cited above) verified the location of Fort Reliance and the existence there of both structures and of deposits which could be expect to yield artifacts. Collections by MacNeish and by Hunston contained stone artifacts showing that the site had been occupied by indigenous peoples as well as by the traders. The stone artifacts relate to a precontact or prehistoric type of technology. There is a period of contact history, however, during which new, introduced technology replaced the earlier lithic technology. Accordingly, a research problem oriented towards Canadian indigenous history was conceived in terms of the following two not unrelated questions.

1. Was the occupation that left the stone tools at Fort Reliance precontact at its inception and unrelated to subsequent construction of a trading post on the site, as we inferred in the historical vignette?

2. Do the stone artifacts at Fort Reliance represent the Han Indian patrons of the trading post at a time when their technology was in transition between an indigenous lithic industry and a more modern industry based on imported manufactured implements?

If the latter were the case, items from the documented, temporally delimited context of this

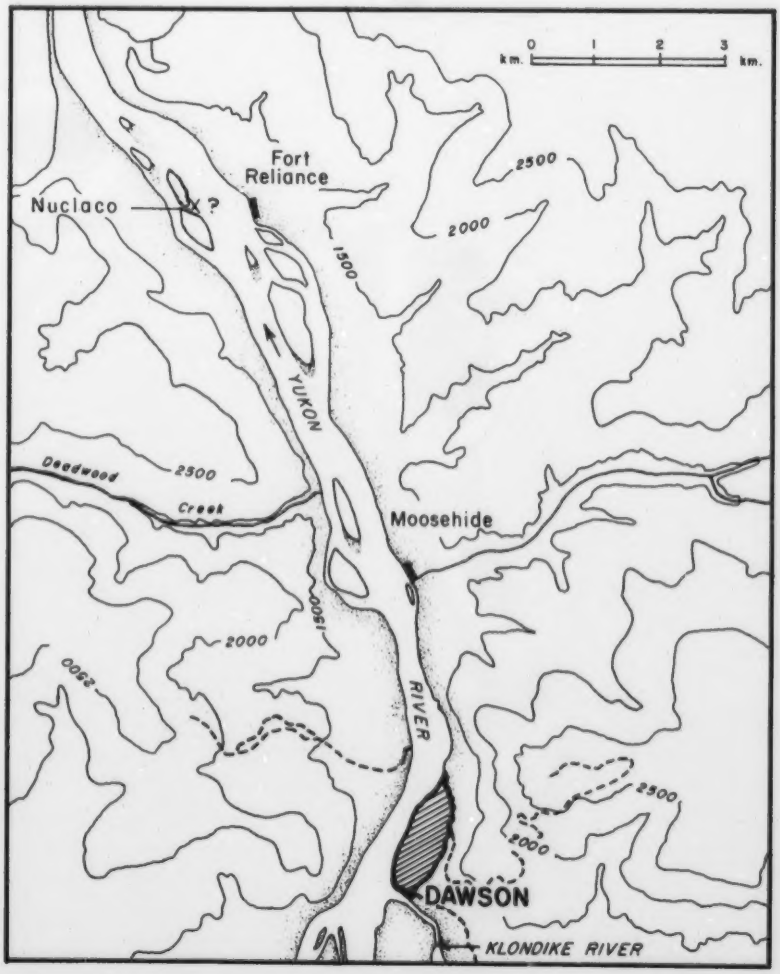


Figure 1.3. Map showing Fort Reliance and vicinity south to Dawson.

trading post could provide a bridge between the modern Han inhabitants of the Dawson region and the prehistoric people of the area (who cannot be identified prior to contact on the basis of written documents). In more comprehensive terms, investigation of the site would help document Native history and culture change during the second half of the nineteenth century.

Moreover, a collection of implements identifiable with the Han would serve importantly in

Figure 1.4 (left). View looking up the Yukon River towards Dawson.

comparisons of implements identified with other tribal-linguistic segments of the Northern Athapaskan continuum, distributed from near the Bering Sea almost to Hudson Bay. This would help to determine whether tribal groups, as defined by traders, historians and ethnologists, can be distinguished on the basis of archaeological data.

A concomitant objective was to determine the potential of the site for future research and development. Although it is not the intent of the Canadian Museum of Civilization to undertake site development, it was felt that it would be desirable to evaluate the site for the potential use of other agencies and interested groups. An important consideration is that the site is endangered because of its proximity to Dawson, its accessibility to tourists travelling on the Yukon River, and its location on an eroding river bank. By 1983, date of the principal investigation described here, numbers of small pot holes had been dug into the site, though most larger pits there appear to be features. Shortly prior to further work there in 1991, there had been extensive unauthorized probing of the site and, presumably, looting of artifacts for private acquisition, apparently with the assistance of a metal detector. Earlier, Hunston (1975) encountered a relic hunter, with custom-made probes, at Moosehide six kilometres upriver from Fort Reliance.

Figure 1.4 (right). The large tree on the left is growing in House pit 2.

1.4. ACKNOWLEDGEMENTS

The investigation in 1983 was instigated at the suggestion of Jeffery Hunston, Yukon Heritage Branch, at Whitehorse. During both 1983 and 1991 Mr. and Mrs. Harry Campbell of Dawson and Jeffery Hunston and Sylvia Neschokat of Whitehorse extended hospitality that helped make a memorable pleasant experience of my work in the Yukon. Lynda Johnson in Whitehorse and Linda Finn Yarborough in Anchorage shared archival information they had discovered pertaining to Fort Reliance and associated persons. In 1991 Henry Henry of Dawson operated the boat rented from the Dawson City (Han) Indian Band and assist with the fieldwork. Crucial logistical assistance was provided then through the Band office, particularly by John Bierlmeier, Margaret Kormandy, and Kenneth McGrath. The Canadian Museum of Civilization supported the preparation and printing of this publication, including the underlying fieldwork and analysis. David Laverie prepared the plans and maps and Steve Darby photographed the artifact plates. Ruth Gotthardt, Yukon Heritage Branch, constructively reviewed and edited the text and provided additional specialized information, contributing significantly to this report.

CHAPTER 2:

HISTORY OF FORT RELIANCE FROM WRITTEN SOURCES

In this chapter historical descriptions and personalities associated with Fort Reliance are discussed critically, followed by a year-by-year account of operations. A section on the Han First Nation completes the historical context.

2.1. CONTEMPORARY DESCRIPTION OF FORT RELIANCE

The few contemporary descriptions of Fort Reliance are given here in chronological order. These sources will be examined critically in the succeeding section.

Mercier (1986) points out that though Reliance bore the name "Fort" it was unfortified and not stockaded. The construction consisted of three or four log cabins built in "Russian" style. By this I presume he was referring to a difference between Hudson's Bay Company and Russian American construction. One Russian technique, not necessarily that used at Fort Reliance, entailed hollowing out the underside of each log to fit over the convexity of the log below. The logs were squared on one face (presumably the interior), and in this manner differed from the unhewn squaw-notched construction common to quickly erected cabins of trappers and prospectors. The roof was covered with birchbark and overlain by turf. The largest structure was the residence of the trader; the smaller cabins, which were more roughly constructed, were store houses. Mercier stated that the larger building measured 30 feet long by 25 feet wide. We found that the outline of the bottom logs of Structure 7, which was the largest structure on the site, measures 6.2 by 9.1 m between log centres or 20.4 by 29.4 feet.

One might presume that the store and the dwelling of McQuesten and Banfield were in the same structure, but McQuesten's (1952) statements: "We had our house and the store completed" and "I got our logs for store and dwelling house..."could be interpreted as store and dwelling in one structure or in two structures. McQuesten later stated that he fell out of the loft of the store. The purported 1883 photograph of Rev. Sims at Fort Reliance shows a building with a loft (entered by a ladder from the outside). Although this photograph probably is not Fort Reliance, the type of construction pictured may be similar.

On July 19, 1883 Lt. Schwatka and party drifted past Fort Reliance. Schwatka does not state that he landed, but some of the details he provides only could have come from a person familiar with the post, which at that time was unoccupied. Schwatka's popular accounts (1885, 1894:245) state:

> A few minutes before one o'clock we passed the abandoned trading station on the right bank of the river, which we surmised from certain maps and from subsequent information to be the one named Fort Reliance. It was a most dilapidated-looking frontier pile of shanties, consisting of one main house, probably the store, above ground, and three or four cellar-like houses, the ruined roofs of which were the only vestiges remaining above ground.

Osgood (1971) pointed out that the cellar-like houses evidently were Han Indian dwellings and are referred to in this report as semisubterranean dwellings.

Before remarking on the trading post, Schwatka drifted past Noo-klak-o which he stated was located directly across from Fort Reliance. He did not land at the Indian settlement, probably because of the current, but a flotilla of canoes gathered around his raft. Yet, from this drift-by he was able to tell that many there were visiting Tanana Indians, a tribe with which he had no previous familiarity! The official narrative (Schwatka 1900:311) repeats the description above in briefer terms:

> Fort Reliance is a dilapidated looking place of two or three houses, a main store nailed up, and three others cellar-like and semi subterranean in character.

The semisubterranean houses could have been built after 1874, especially as no structures antecedent to McQuesten's arrival are noted in the accounts, but evidence from the archaeological tests suggests that by no means were they new in 1883. Miners cabins were built later, but they hardly account for the house pits. McQuesten recorded that in the late summer and autumn of 1882 two parties of miners, amounting to twelve persons, arrived at Fort Reliance by raft. When the season started to close in "they all built cabins and went into winter quarters" (McQuesten 1952:10, Mercier 1986). McQuesten tells how the men would gather at the "station" for social evenings and how they were joined by the Indians living near the post at Christmas and New Year's. But he does not state that the miners built cabins on the actual grounds of Fort Reliance or where or in what kind of houses the Indians lived. The area behind Fort Reliance, and terrace sections immediately above and below the site were examined several times in 1983 and 1991 for cabin sites. No old cabin outlines were seen. My tentative conclusion is that the miners actually were living at Fort Reliance. In addition to cabin outlines sufficient to account for the original trading post structures noted by Mercier and by Schwatka, we recorded a few additional cabin settings at the north end of the site for a total of seven structures exclusive of five house pits.

Sims reported that the Indians at Fort Reliance were staying in ten houses, each with at least four families (LPCMS Reel A-112; Wesbrook 1969) but these were located "just opposite [the trading post] on the other side of the river...",which is where Sims put up his tent. Forty families (four families for each house) also is in accord with the number of persons reported by Schwatka, though both Schwatka and Sims reported that about half those present were visitors from upriver and from the Tanana River of Alaska. Schwatka also noted twelve dwellings, at Nuclaco across the water from Fort Reliance. Sims (1996) used the term "houses" for Native-built dwelling structures, but he stated that those built by the Han, especially at a settlement farther down the

Yukon River, were more substantial than those he had seen of other tribes. Otherwise, he does not describe the dwellings.

A sketch by Willis Everette sketch portrays the site as he as he remembered it from 1884. There is one large cabin with storm shelter entry, one smaller cabin, and two very small structures. The same number of buildings, one principal structure and three smaller ones, is reported by Mercier and Schwatka. Everette also shows at the right (south) end of his sketch a dome-shaped structure which must be either the roof of one of the semisubterranean dwellings noted by Schwatka or is a skin tent of the characteristic form used by the Han. More than one semisubterranean house should have been portrayed, but the Everette sketch probably was done retrospectively and from the assumed perspective of a position out on the river. Thus some features may have been omitted. Also omitted, but possibly never present on the site within the field of the sketch, are the cabins in which miners overwintered in 1882-83.

Five miners again overwintered at Fort Reliance in 1884-85. That season Mayo was in charge of the post, but recorded details are sparse. The tempo of mining in the region was accelerating, and in 1885-86 sixteen men wintered at Fort Reliance and in the vicinity (McQuesten 1905). What comprises the "vicinity"is not clear, but most of the miners were assembled at Fort Reliance in the spring when McQuesten took them upriver on the *New Racket*. Possibly additional cabins were built at the site in the autumn of 1885 to be occupied only for one season before the settlement was abandoned. If not banked with dirt at the base, which would leave a dirt berm, and if quickly recycled for steamer fuel, these cabins might leave almost no traces.

2.2. DESCRIPTION AND EVALUATION OF SOURCES

With a tempting aura of romance, the history of Fort Reliance, summarized in Chapter One, leads to the fascinating lives of the principal actors associated with the trading post. It is easy to become engrossed in the stories of their lives, and for a moment forget about the dirty task of excavation and the rusty artifacts. Here, attention is directed to those who left written accounts of being there. Primary sources of information pertaining to the traders and miners at Fort Reliance include the recollections of Leroy "Jack" McQuesten (McQuesten 1952), who built the trading post, and François X. Mercier (Mercier 1986) who ordered the trading station established. Other sources include brief notices by travellers who passed the post during the years it was in operation and immediately thereafter. These are particularly those of Willis Everette (who made a sketch), J.B. Moore, Billy (William) Moore, Frederick Schwatka, Rev. V.C. Sims, and J.E. Spurr. Additional reports document the succession of trading posts in the region. I have not found any accounts by A. Harper, Joe Ladue, or A. Mayo who at times managed the trading post, although a book on the Klondike appeared under Ladue's name. Further biographical details for many of these persons are to be found in the publications by Callahan (1975), Kitchener (1954), Mercier (1986, especially the editor's notes), and Webb (1985).

Leroy N. ("Jack") McQuesten

One published (1952) and one unpublished (1905) version of McQuesten's "Recollections" have been examined. The published account covers the years 1871-1885, which are important ones in the history of Fort Reliance, while the unpublished 1905 letter to Albert McKay extends the narrative into the 1890s. It has been reported that additional autobiographical documents exist (Wright 1976). Although it is not easy to follow the chronology of these accounts, and there may be some mix-up of dates and events (Wright 1976), I have not recognized major discrepancies. In the cases of uncertainty, from my interpretation, the dates are not critical. These two papers, of 14 pages printed length and 14 pages typescript, respectively, form the primary basis for the historical outline in this chapter.

François Xavier Mercier

Retrospective manuscript notes by Mercier at Gonzaga University, Spokane, translated and edited by Linda Finn Yarborough were made available to me in Juneau, Alaska in 1983 for a file report that preceded the present publication. Subsequently, Mercier's edited "Recollections", with corollary illustrations and Yarborough's extensive annotation, have been published (Mercier 1986). Mercier, a Montreal Canadian, was general agent for the Alaska Commercial Company in the Yukon drainage at the time Fort Reliance was established (1874), and it was he who ordered that the post be established and helped select its site. Some of Mercier's recollections were written in Quebec after the 1890s discovery that led to the Klondike Gold Rush. He left Alaska just before the Fortymile discoveries, so his account focuses on an earlier period of commercial penetration and exploration of the Yukon drainage. Later he was a consultant for a Bering Strait communications development plan (for which I lack information). It may be related to this that he made a trip to Bering Strait and Siberia under the auspices of the Société Géographique de Paris (*La Patrie*, 5 January 1906). Mercier also reappeared briefly as a person consulted by Dawson on the subject of the upper Yukon fur trade (Dawson 1889:289). The "Recollections of the Yukon" are not a chronological detailing of events but cover a number of activities that took place while Mercier was in Alaska, working for various trading companies between 1868 and 1885. Mercier provides data on traders and trading companies, much of it for unspecified reasons referred to the year 1874 when Fort Reliance was founded.

He was interested in the work of the Roman Catholic church in the Yukon drainage, corresponded with several Roman Catholic priests who were active in the region, and his communications and parts of the manuscript have been used extensively by Father J. Jetté. As he was leaving Alaska Mercier assembled a large collection of ethnographic specimens, and also some natural history materials, most of which now are in the Canadian Museum of Civilization and the Canadian Museum of Nature in Hull and Ottawa (Dawson 1894:2; *The Alaskan* Feb. 26, 1887; Lamb 1898:137). Only four of the 846 ethnographic specimens are attributed to Indians of the Yukon River, none to those in the vicinity of Fort Reliance, while the palaeontological specimens come from below the mouth of the Tanana River and, like most of the ethnographic

specimens, the vicinity of St. Michael on Norton Sound. However, E. Nelson, who visited the lower Yukon and coastal regions, did obtain some Fort Reliance artifacts for the Smithsonian Institution.

Lt. Frederick Schwatka

Lt. Frederick Schwatka stopped briefly at Fort Reliance on July 19, 1883. His account thus complements and supplements that of Rev. Sims (below). Details of Schwatka's travels on the Yukon are published in several official and popular editions. Maps of the route, including one that shows the village of "Noo-klak-o" directly across from Fort Reliance, are found in the official report of the expedition (Schwatka 1900).

A few miles above the mouth of the Klondike River Schwatka passed an Indian tent camp. Evidently, not all the Klondike (Dawson) band had joined with those whom he found congregated at "Noo-klak-o." Schwatka drifted by Nuclaco, located on the west side of the Yukon River, but, judging from the detail he was able to provide on Fort Reliance proper he may have landed at the trading post. The main body of Indians, about 150 people (Schwatka 1894:246), were located at Nuclaco, described as a semi-permanent village. Schwatka states that many of these were visitors of the Tanana tribe. At this time the main activity at Nuclaco was salmon fishing. Through his careful study of Schwatka's reports Osgood determined that most of the ethnographic information they contain was recorded by his surgeon Dr. Wilson (Osgood 1971:77). Osgood suggests that Dr. Wilson was not very sympathetic towards the Indians and that much of his information for the Han is from Minook (Waniuk), a Koyukon-Russian from the lower Yukon employed by McQuesten and presumably a biased source (Fig. 2.2).

Rev. Vincent C. Sims

The Rev. Sims of the Church of England visited the Han Indian settlements along the Yukon River in 1883. Primary information on his travels are found in a published letter dated November 23, 1883 (Sims 1886), and in the Public Archives of Canada "Letters and Papers of the Church Missionary Society, London" (LPCMS L Reel A-112, Sims Papers). Wesbrook (1969) describes the archival material including Sims' brief, informative travel journal. The writer scanned the difficult journal microfilm for additional detail not conveyed by Wesbrook but found little. Sims writes primarily of his relationships with Native peoples and tells little about either their camps or the installations of the whites. The spelling "Sim" used by Wesbrook appears to be an artifact of Sims' almost illegible handscript. We will turn to his description in a later section.

Webb (1985:74-75) errs, probably unintentionally through tight word editing, in implying that in 1883 Sims went as far up the Yukon River only as David's village, located down river from Fort Reliance near present Eagle, Alaska. This was the year Fort Reliance was not operated because the steamboat had broken down near David's village. McQuesten confirms this detail in his "Recollections", noting that while they were delayed at David's village, Sims (and also Carr) came

along from upriver. The next year, 1884, among his extensive travels on the Yukon and tributaries, Sims ascended the Tanana River some distance and then floated down to Nulato where he took passage to Fort Yukon on the steamer headed for Fort Reliance, debarking before the steamer continued for Fort Reliance. From Fort Yukon he returned to his home base at Rampart House on the Porcupine River.

In his detailed letter of November 1883, Sims (1886) recounts the canoe trip accompanied by three Indians from the Porcupine River. Four days travel from Fort Yukon took the party to the Upper Ramparts and, the upper settlement of Gwich'in Indians. Another three days travel brought them to the lowermost Han summer settlement of real houses where they spent ten days. This would have been Davids village, where Sims met a white man, evidently Jo. (Joseph) Ladue as identified by Schwatka who came to the same place a few days later. Three days further journey up the Yukon brought him to the second Han settlement where Sims stayed a week. After that, "it was four days' journey to the next Indians, and on the way we were surprised to meet a survey party, sent out by the United States Government, coming down the river on a raft" (Sims 1886:54). This was Lt. Schwatka. "Two days after [that]" Sims arrived at Fort Reliance and found assembled the largest band of Indians he had yet met. During his two weeks among these "Trodh tsik" (Tro'dek or Klondike) Indians Sims found visitors from other tribes, including "some from above" (probably Northern Tutchone) and some that had come overland from the Tanana River (Upper Tanana). Two years later, Lt. Allen met some boys on the upper Tanana River whom Sims had instructed, and was surprised to hear them recite the alphabet, to varying degrees of accuracy (Allen 1887:75). We have noted that while Sims was at Fort Reliance the trader was away, on his annual trip to St. Michael for supplies and did not return that year because of a breakdown. Sims did meet one other white man at Fort Reliance, E. (J?) Carr, who had lost his outfit and arrived there to wait for the steamer. On Sims' brief career on the Yukon, Lt. Allen wrote the following. "He was highly esteemed by the natives (1887:95). ...the result of the teachings and examples of Mr. Sims...isplainly noticeable, and as valuable to the traders as to the natives, all of whom express a warm feeling for his memory (1887:144)." Sims died the year after he had visited Nuclaco.

Wickersham (1938 p. 121) has published a photograph of services said to be held at Fort Reliance on August 18, 1883. He does not indicate the source of this photograph which, together with others of the period 1882-1885, probably can to be attributed to Charles Farciut of the Schiefflin prospecting expedition (as in the Crossroads of Alaska Smithsonian travelling exhibition) and to Moses Lorenz of the Alaska Commercial Company (L. Yarborough personal communication). One photograph in this series is credited to Lorenz by Kitchener (1954:152). Allen met Lorenz at St Michael and borrowed a camera and plates from him (1887:113) and possibly also some photographs that appear in his report. Winter scenes on the Yukon in 1882-83 are not Allen's, are unlikely to have been taken by Lorenz who was based on the coast, and probably are the work of Farciut. The photograph of services would have been one of the most important visual documents for Fort Reliance (the other being the Everette sketch) but unfortunately its attribution is wrong according to the following details.

- Sims was not a photographer. He is unlikely to have carried photographic equipment during his often difficult travels undertaken largely by canoe, his reports and journal do not mention photographing, and he even regretted that he could not sketch some of the magnificent scenery (journal entry July 9, 1883).

- The only other white person at Fort Reliance when Sims was there was Carr. Car had lost his outfit and it is not possible for him to have been the photographer.

- Schwatka's party had photographic capabilities, but Schwatka passed Sims on the river below Fort Reliance.

- Sims stayed at the Native settlement across from the trading station, and it does not appear that he held services on the grounds of Fort Reliance proper. He indicated that there were a lot of people present (visitors, 10 houses each with about 4 families), but there appear to be only about 8 adults and several children present in the photograph (LPCMS L).

- The date of the photograph is a clue that something is wrong. Sims left Reliance, to return down river, about one week into August, 1883. He was not there on August 18.

- One cannot be certain though that the date stated by Wickersham is correct (there are several errors of detail in his book). Nevertheless, accepting the date of August 18 as correct, we can note that according to his journal, Sims held services on Sunday July 29 and Sunday August 5, 1883. The other days of the week he was teaching August 18, 1883 was a Saturday, not Sunday. But in 1884 August 18 was a Sunday.

- In 1884 Sims travelled in Alaska where he visited Fort Yukon, Tanana (Nuklukayet) and Nulato. A photographic opportunity (by Farciut or Lorenz?) probably arose on one of these occasions.

In the face of this negative analysis, it remains that details the photograph fit the main structure and terrain at Fort Reliance quite well (Fig. 2.1, 2.3). Parenthetically, it may be no coincidence that there was another early photographer on the lower Yukon and at St. Michael during the early 1880s: Edward Nelson, who left Alaska in 1881 (Condon 1989:52-53).

Willis E. Everette

Everette has provided valuable documentation in the form of a sketch of Fort Reliance (reproduced in Mercier 1986 and Webb 1985). Wickersham (1938:104) characterized Everette (Willis, Pinyit) as an "adventurous ethnologist [who] duplicated Schwatka's trip down the Yukon." Everette was a civilian scout engaged to enter the Yukon headwaters and explore eastern Alaska south of the Yukon (Sherwood 1965:103-104). This is not exactly what Everette did. He went to Fort Reliance, which probably was according to his plans, waited for the steamer to arrive at the end of summer with supplies, then finding that adequate provisions would not be available (Bancroft 1886:736) he went on down the Yukon River on the New Racket, overwintered at St. Michael (where he was photographed among a group of Alaskan pioneers by Lorenz), and returned to San Francisco in 1885. Further information on his intentions and failure to follow through are available in contemporary published accounts (the Nov. 7 1885 *Alaskan* is especially critical in its assessment). Everette claimed to have collected a mass of historical, geographical and linguistic information but evidently little of this material is known to exist today (Sherwood 1965:104; Yarborough annotator's note in Mercier 1886:65). Yarborough notes one geological

publication and four Bureau of American Ethnology manuscripts, but nothing pertinent to the Yukon basin is listed in the Smithsonian (BAE) manuscript catalogue. There also may have been a report prepared for the War Department (*The Alaskan* Vol 2 No 16 Feb. 19, 1887 after the Portland, Oregon *News* which carried a rambling lengthy description of the upper Yukon drainage and its mining activity provided by Everette and said to be extracted from the report). Everette is said to have returned to Alaska later pursuing mining activity and collecting linguistic data for the Smithsonian Institution (Bureau of American Ethnology Annual Report cited by Sherwood), hence Wickersham's statement that he was an ethnologist, but he is unknown in the anthropological literature for the region. Except for BAE Annual Reports cited by Sherwood, I have not found any reference to his being in the Alaska-Yukon region after 1885.

The archives of the University of Alaska at Fairbanks holds a sketch of Fort Reliance as it was seen in 1884 by Everette, entitled "Fort Reliance (abd) 1887." The sketch bears the notation "Here is where I remained 22 days (on a reconnaissance of the entire Yukon river), all alone, sick with typhoid fever, waiting to die, in August of 1884" (Everette n.d.). The text continues stating that at that time he was not aware of the golden wealth of the Klondike. If the sketch was not retrospective, at least the text is. While Everette claimed he was sick and all alone, Sherwood (based on Lt. Allen's diary of 1884) states that he was living at Reliance with an Indian woman and had declined an offer of prospectors to assist him in his exploration of eastern Alaska. Nevertheless, the Everette sketch is the most important visual document for Fort Reliance.

Mike Hess

Two letters written by Mike Hess from Fort Reliance in 1885, one of them in July, are published in November 1885 and January 1886 issues of *The Alaskan*, a Sitka Newspaper. They describe prospecting and do not pertain directly to the trading post, but the letters are evidence that there was communication or informal mail service--out of the country. Hess notes as well the trading trips of Upper Tanana Indians who portage eastward to the White River and descend by raft to Fort Reliance. In his July 20 letter he reported that "we are" living on salmon.

Frank Buteau

Buteau's recollections (Buteau 1972:87 in Heller, ed., 1967, 1972) provide a wealth of information for the immediate post-Reliance period. He notes that in the late summer of 1886 the trading post formerly located at Fort Reliance had been moved to the mouth of the Stewart River.

William D. Moore (Capt. Billy Moore)

In his autobiography (as told in Chase 1947) Billy (or Billie) Moore notes that when he passed Fort Reliance in 1887, in route to Fortymile, natives were scavenging buildings to construct a raft in order to descend to Fortymile. Moore was on the *New Racket* with Mayo when the latter

arrived at Fortymile (from upriver) in July (Heller 1967). This is the Moore associated with the Skagway town site, who held an early mail contract for the upper Yukon, and during the 1890s and later worked at trading posts in western Alaska. Biographical material I have examined does not link him directly with Fort Reliance; thus the Wm. Moore or Mer there in 1882-83 may have been a different person.

J. Bernard Moore

J. Bernard Moore passed a native fish camp at the mouth of the Klondike in 1887 and then stopped at Fort Reliance.

"At 8 a.m., we passed Ft. Reliance on the righthand side and three miles or so below the mouth of the Klondike, and there bought a pair of overalls for two dollars and one pair of moccasins for one dollar" (Moore 1968). Although the site location indicated is essentially correct (except for halving the distance), this statement is totally incongruous, given the availability of other information indicating that Fort Reliance had not been operated after spring 1886. It is not inconceivable, though, that Moore found someone at Fort Reliance temporarily. Sometime after breakup in 1887 Mayo moved the trading post from the mouth of the Stewart River to the Fortymile (Davis 1972:40,42). He might have stopped in route at the site to trade with the Han.

Lt. Allen

Lt. Allen never was at Fort Reliance but he is an important source for information relayed through traders and Upper Tanana Indians. Allen had a prominent Army career in many parts of the world (Sherwood 1965:111) but is best known for his accomplishment, early in his career, as the first white person to provide a description of the upper Copper River, Tanana River and middle reaches of the Koyukuk River (Allen 1887, 1900) Allen also left a diary (cited by Sherwood 1965:108) which, other than for Sherwood's minor use, does not appear to have entered the historical and anthropological source materials for Alaska. His assistant Private Fickett also made brief notes (original in the Archives, University of Alaska at Anchorage) that were not consulted for this report. Allen's report contains numerous references to Upper Tanana trading at Fort Reliance and contextual information for the Atna of the Copper River with whom some Han may have traded.

2.3. YEARLY HISTORY OF FORT RELIANCE

1874: Fort Reliance Established

McQuesten, Mayo, and others who in 1873 had recently arrived in the Yukon basin of Alaska and northwestern Canada were hired by François Mercier to work for the Alaska Commercial Company. Mercier planned that on his part McQuesten would establish a trading station above

Fort Yukon, either on the Porcupine tributary or on the main river. The Alaska Commercial Company supply vessel, the small steamer *Yukon* (in 1869 the first steamboat on the Yukon River) left St. Michael on the Bering Sea in July, and after leaving supplies at stations along the way reached Fort Yukon early in August. There, Mercier decided that he would take the *Yukon* farther up the Yukon to the vicinity of the Deer River (later called the Klondike, derived from its Han name) to establish the new post. A deciding factor in this decision evidently was the old Klondike chief Catsah (also spelled Cateah) who with a number of his men were in Fort Yukon at that time: "Cateah, the chief of the Trondick Indians was here and he insisted on the agent [Mercier] building a station near his house" (McQuesten 1905:5). Mercier also was aware that he could reach the Upper Tanana market with a post at the mouth of the Klondike River.

Later in August (18th or 27th according to McQuesten's two accounts) the site had been selected, three tons of supplies unloaded, and the *Yukon* headed back downriver. Left on the shore to build the new post was McQuesten and his assistant the Englishman Frank Barnfield (Banfield). There may have been an interpreter of mixed Russian and Athapaskan ancestry, but the early Alaska Commercial Company traders rarely mentioned their interpreters, nor do they describe actual trading procedures. Some Indians were employed to haul logs and assist in putting up the buildings. Meat was purchased from the Indians who, in turn, traded for all the supplies McQuesten and Barnfield had.

Mercier correctly asserted that Fort Reliance brought the upper Yukon and Upper Tanana Athapaskans 250-300 miles closer to the market for their furs, halving or more the distance they had to travel. Fort Reliance is located approximately 230 miles above Fort Yukon (to its southeast), the distance by water travel being closer to 300 miles. Below Fort Yukon, it was another 220 miles direct distance to the next post, located near the mouth of the Tanana River, and another 170 miles, direct, to Nulato below the mouth of the Koyukuk River. Early trading posts in the Yukon drainage are listed in Table 1. Not all these posts were open concurrently, and for most of the period of its operation Fort Reliance was the only post above Fort Yukon.

1875-76: The Second Season

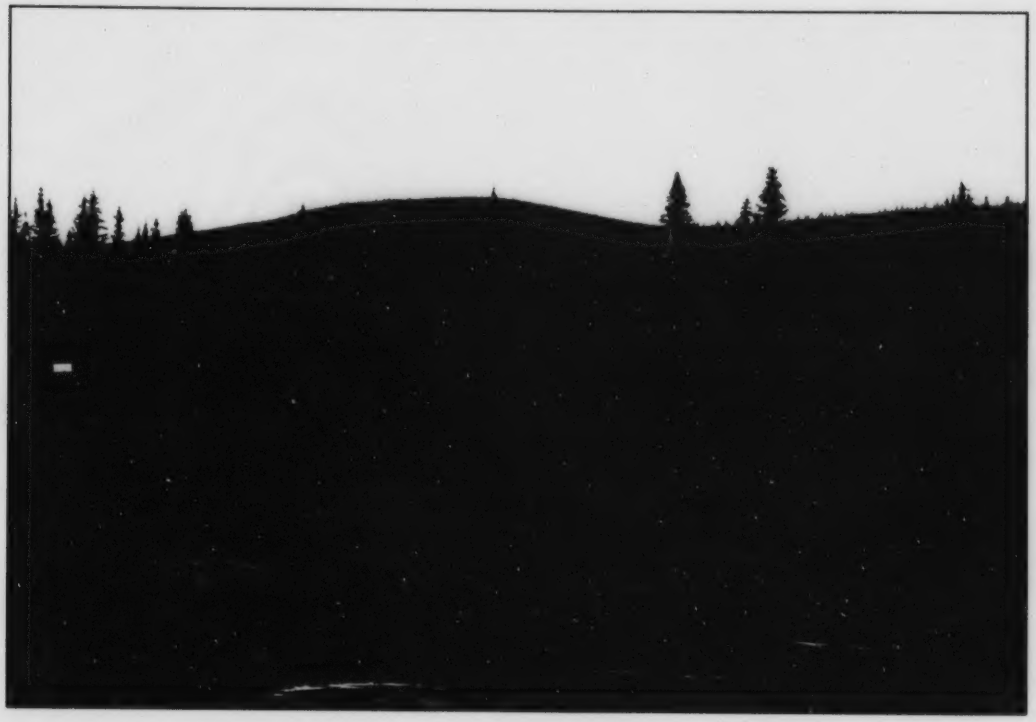
The ice in the Yukon broke on May 10. Six days later the traders loaded their furs, closed the post for the season, and descended the river to the supply depot on the Bering Sea at Saint Michael. The accounts do not indicate the type of boat they had. Obviously they were not picked up by steamer. McQuesten states that for several years he went down river, to St. Michael in the spring in a large boat manned by ten Indians. In August the year before, supplies had been towed up to Fort Reliance in a whaleboat, which perhaps was hauled ashore and left there. At the end of summer he was again taken back up the Yukon in tow. Operating procedures of the Alaska Commercial Company had changed. Now, McQuesten, Harper and Mayo became semi-independent operators, receiving a "franchise" for the entire upper Yukon region and distributing Alaska Commercial Company goods, but in turn they were obligated to convey their furs exclusively to that company. In August when the *Yukon* towed their barges of supplies up the

Figure 2.1. The site in 1983 was much as it appeared when François Mercier and "Jack" McQuesten first saw it from the deck of the Yukon in 1874.

river, McQuesten took over Fort Yukon and Mayo and Harper went on to reopen Fort Reliance. With two men there, it was possible for one of them, Harper, to prospect the streams of the region, including the Sixtymile (above Fort Reliance) and Fortymile river (below Fort Reliance).

1876-77: The Third Season

This seasonal mode or cycle of operation, which was general for the Alaska Commercial Company in the Yukon drainage (VanStone 1979), continued for several years. After breakup the traders would close the post and at least one of them (when there was more than one person at the post) would descend with the furs to St. Michael where he would arrive in June. Towards the beginning of August the Alaska Commercial Company steamboat would leave St. Michael, dropping off the various traders and their supplies in route. Some years McQuesten and his associates had their own steamer (*Yukon* and later the *New Racket*) for their operations at Tanana, Fort Yukon, Fort Reliance and later (1886-87) the Stewart River and the Fortymile. But



with increased mining after 1885 the trade, heretofore largely based on the Native fur trade, changed to emphasise serving the miners, though the post continued to trade in furs.

Harper and Mayo again operated Fort Reliance during the 1876-77 season. Harper went back to their gold prospect on the Sixtymile River. McQuesten moved from Fort Yukon, which was then vacated by the traders for several years, to Tanana Station [1].

1877-78: The Fourth Season

This was a tense year for Indian-Trader relationships. While the traders were away during the summer of 1877 (probable date in the somewhat confusing chronology of the late 1870s) local

[1] By Tanana Station McQuesten probably meant the post at the mouth of the Tozitna River and not the one a few km farther up the Yukon at the site of Tanana (for further explication see Turck and Turck 1992).

Han broke into the store, took and ate some grease laced with arsenic to poison mice, and as a consequence two old women and a blind girl died. This created a problem which McQuesten settled by paying a modest recompense for the lives lost, and, in turn, the Natives paid McQuesten for the goods they had taken.

Earlier, however, in the spring when Mayo and Harper were leaving there had been thefts while they were loading their boat. One of the thieves was caught and a row nearly resulted. The elders counselled the younger Indians not to steal, and the matter seemingly was settled. Nevertheless, Harper and Mayo were reluctant to go back to Fort Reliance. Accordingly, McQuesten traded places with them, Harper and Mayo going to Tanana Station. McQuesten did not want to give up Fort Reliance because their former employer, François Mercier, now working for the rival Western Fur and Trading Company, had established a new post near Tanana and his trade there was not as profitable as it had been previously.

McQuesten took his translator "Waniuk" (better known as Manook or Minook) with him, though he states in his "Recollections" that he was alone at Reliance for five seasons. Parenthetically, it can be suggested that the presence of Minook and some of his part Russian relatives in the upper Yukon region may have contributed to stories of early Russian traders in that region. The accounts, which go back as far as the decades prior to establishment of Fort Reliance when little notice was taken of the international boundary, initially were relayed through Lower and Upper Atna, Upper Tanana, and finally local patrons to Fort Yukon, especially to manipulate the Hudson's Bay Company trader. During the autumn McQuesten went up to the Sixtymile prospect discovered by Harper, but found the gold pockets to spotty too warrant mining. Trade with the Indians was very good and there was no further trouble. In fact, in the spring after McQuesten had fallen and broken a rib, the Han would send messengers daily from as far as 20 miles to inquire of his health. As McQuesten interpreted it (1952:7), "They thought if I should die that they might be blamed for killing me as there was no other white man in this part of the country."

1878-79: Fifth Season

Affairs continued much as they were the previous season. Sometime during these years all three of the men whom we have been following married creole or Native women from the middle Yukon (Callahan 1975), but almost nothing is recorded about family life at the posts.

1879-80: Sixth Season

As during the previous season, McQuesten again operated Fort Reliance.

1880-81: Seventh Season

The "opposition", the Western Fur and Trading Company, had a newer, larger steamer, the

75-foot *St. Michael* (1879, second steamer on the Yukon River) in charge of François Mercier which took McQuesten and his tow of goods back to Fort Reliance after they had put the aging *Yukon* up at Fort Yukon. Apparently, relations between the two traders were amicable, although Mercier had competed directly with McQuesten at Tanana and on his way back, down the Yukon he would stop to establish a new trading post only about 130 km below Fort Reliance at Belle Isle, near present Eagle.

At St. Michael McQuesten had been given a Signal Service standard minimum thermometer by E.W. Nelson, which he returned the following summer with a record of four daily observations extending from September 4, 1880 through May 23, 1881. The Yukon froze that winter at Fort Reliance on November 2 and broke the following spring on May 14-17, cleared the 20th, and McQuesten departed the 23rd (Nelson 1897). Through this contact, apparently, the Smithsonian Institution acquired a number of arrows (Fitzhugh and Crowell 1988:65), a canoe model (Osgood:1971 Pl. 2A) and possibly other Indian artifacts from Fort Reliance.

Although McQuesten and his associates, Harper and Mayo, had been aware of the potential of the upper Yukon for more than furs, the first hint that others were interested in the region came in 1880: "It was reported that fall that there were white men on the head waters of the Yukon.... I supposed it was prospectors looking for gold and it proved to be the case..."(McQuesten 1952:9).

1881-82: Eighth Season

The old *Yukon* was replaced by the small but powerful 75-foot-long *Yukon* (II), the third steamer on the river (Osgood 1971: Fig. 3; Mercier 1886: Fig. 2) whose size was a considerable increase over her predecessor. (Webb [1985:67] states that the new *Yukon* was launched in 1880). According to Allen (1887), the *Yukon* was owned by the Alaska Commercial Company, the *New Racket* by the three traders. McQuesten again opened Fort Reliance and did some prospecting in the area, but with insubstantial results.

The violent spring breakup, occurring at Fort Reliance on May 5, did considerable damage farther down the Yukon, destroying many villages and most of the trading post at Nulato, but Fort Reliance escaped. During the summer (1882), Mr. and Mrs. Moise Lorenz (Lawrence), the general commissary agent of the Alaska Commercial Company from St. Michael and his wife, came up to Fort Reliance by steamer and with McQuesten they ascended to within 40 km of the Pelly River (the date in McQuesten's recollections is confirmed by others). McQuesten later learned that there were eight miners on the Pelly River.

1882-83: Ninth Season

When McQuesten returned to Fort Reliance in August 1883 he brought Mercier as far as Eagle (David's camp, Belle Isle). Mercier had rejoined the Alaska Commercial Company but

wished to continue trading in the vicinity of Eagle (his Belle Isle) and to do that he had to build a second post there. This was the fifth trading post that Mercier built along the Yukon River. Mercier indicates that at this time the other company's station at Belle Isle was not in operation, and also that the name "Belle Isle" properly pertains to his later post (1986:3).

Two parties of miners crossed the Chilkoot Pass late that year and arrived at Fort Reliance in September. Among them were Joseph Ladue, William Moore Sr. and others who were to figure prominently in the history of the Yukon drainage. A number of the first group went prospecting in the Sixtymile area with McQuesten. Later that autumn the party of twelve prospectors built cabins at or very close to Fort Reliance (Table 2.1). Between the provisions they had brought and the flour McQuesten was able to supply, they were able to overwinter in the country. Possibly they were the first outsiders other than the traders, and a few missionaries in the northern Yukon, ever to do so. "Most all the men would meet at the Station in the evening and we would play cards, tell stories and the winter evenings passed away very pleasantly" (McQuesten 1952:10). A mining district was organized and McQuesten was elected recorder. (I do not believe that the records have survived.) The Indians of the area were among McQuesten's Christmas and New Year's guests. An amusement contributed by the Indians, and attempted by the miners, was the moose skin toss.

As winter conditions abated, the miners dispersed to the creeks. Many went again to the Sixtymile River, located approximately that distance up the Yukon from Fort Reliance. While there was still snow for travelling, Ladue had hauled their provisions to the Sixtymile where he cached them for use during the coming open season. This may be the basis for Kitchener's (1954:151) statement that Ladue set up Fort Ogilvie at the mouth of the Sixtymile River for the Alaska Commercial Company in 1883. The Dominion surveyor Wm. Ogilvie actually was not known in the Yukon at that time, and in Table 2.2 I assign a date of 1894 to this post.

1883-84: Non-season, Tenth Year

After a summer of prospecting and mining in 1883, most of the prospectors who had been with McQuesten the previous season left the country because of poor prospects. Wm. Moore was taken out earlier with a bad case of scurvy at the end of spring when the traders went down river. However, two persons, Joe Ladue and Charley Powell, got enough supplies from McQuesten to stay over in the interior.

This summer the Schwatka party floated past on July 19, stopping briefly but finding the post seemingly abandoned. There was a large group of about 150 Indians there, on the island opposite the post. Four days later Rev. Sims arrived, and soon also the prospector James Carr, who had lost his outfit in the woods near the Sixtymile. Sims and Carr waited for the supply steamer, but it did not arrive. They learned that the steamer had broken down near Eagle.

Neither McQuesten nor Sims, both of whom report the breakdown, indicate whether the

steamer was the *Yukon II* or the *New Racket*, but Schwatka (1894) states that it was the *Yukon while Webb (1985:72, 74) states that it was the New Racket. Yukon* appears to be correct. McQuesten had sent word to the few prospectors remaining up river, and who were depending on him for supplies, that he would not reopen Fort Reliance. Some supplies for the Indians were off-loaded ten miles below the site of Eagle (David's camp) where the steamer had broken down, and after temporary repairs were made the *Yukon* went back to the coast, leaving McQuesten at Tanana where he overwintered. A number of prospectors from the upper Yukon, who probably would have stayed around Fort Reliance, followed McQuesten and also overwintered at Tanana. None of the accounts tell what was happening at David's Camp (Belle Isle) above the point where the steamer broke down. It appears to have been closed that year.

Several events of 1883 bear further explication. First, we may note the coming and going of the steamboats, which sometimes is more significant and, for chronology more reliable than imperfectly-recalled dates. The explication below also provides an "audit" of the various accounts used in the historical narrative presented in this chapter. The Alaska Commercial Company had bought out the "opposition" (Western Fur and Trading Co.) and in 1883 it regained a monopoly over the trade in the Yukon drainage, exclusive of the upper Porcupine River where the Hudson's Bay Company operated). That spring when the WF&TC trader John Boulene was leaving Belle Isle on the *St. Michael* (which according to Schwatka had wintered at Belle Isle) for the coast he made a party together with McQuesten who had arrived from Fort Reliance at the end of the 82-83 season, and with Mercier from the other, Alaska Commercial Co., post at Belle Isle (there were two, rival posts at Belle Isle that season). The ACCo men apparently also a scow or other boat. However, the *St. Michael* ran aground above Fort Yukon, as is seen in Schwatka's frequently reproduced illustration (Schwatka 1885, Mercier 1886: Fig. 11), could not be refloated, and so after 20 days Boulene and his crew left her (McQuesten 1952:12). In early August Capt. Petersen pulled her off the bar with the *Yukon* for her new owners the ACCo, and towed her to the mouth of the Yukon to the shipyard at Andreavsky where they arrived near the end of the month. (The apparent chronology is that McQuesten and Capt. Petersen started up the Yukon River in July, stopped at Fort Yukon to do ship-based trading, were met there by Schwatka on his drift down river, continued on up the river to the grounded *St. Michael* which they freed and secured for later retrieval, resumed travel to the point of their breakdown below Belle Isle, after temporary repairs and trading started their descent late in August, picking up the *St. Michael* in route, eventually meeting Schwatka again at Anvik.).

The *Yukon* (I) had been destroyed earlier, and, as we have seen, the *St. Michael* was out of operation in 1883. There was one additional steamer on the Yukon. This was the diminutive *New Racket*. The *New Racket* had been brought in by mining interests in 1882 and when this group left in 1883 Harper, McQuesten and Mayo bought it independently of their contract with the Alaska Commercial Company. In coming years these associates would put the *New Racket* into winter quarters at various locations in the Yukon drainage, where sometimes they had gone for prospecting, while the *Yukon* was put up at Andreavsky.

Early in the summer, 1883, the *New Racket*, under Capt. Mayo, was occupied in concluding the logistics of the Scheffelin mining party. Later, on August 11, Schwatka, while descending the Yukon River, passed Mayo in the *New Racket*, coming up stream not far above Nulato (Schwatka 1894, 1900). At this time the *Yukon* already was out on its annual resupply and trading run up the river and was somewhere above Fort Yukon, to breakdown just below Belle Isle (Eagle). Schwatka records that Capt. Peterson later explained the delay in the *Yukon* regaining the lower reaches of the river to meet him, by the fact that the *Yukon* had blown

out a cylinder head (broke pitman arm, in turn damaging the cylinder) while trying to make Belle Isle and for that reason had to return down river under reduced steam (1894:333). Wickersham (1938:148) illustrates all three steamers in a plate aptly entitled "the entire Yukon River fleet in 1883" at Fort Adams (near Tanana), though given the series of events described above there likely were few days in 1883 when the fleet could have been afloat at Fort Adams.

The first large river boats similar to those portrayed in goldrush accounts were the ACCo's 140-foot-long *Arctic* (1889), followed later by larger boats such as the 229-foot or longer *Hannah*, *Sarah* and *Susie* (Osgood 1971:122; Kitchener 1954). The era of the large riverboats completely postdates Fort Reliance.

This account of the breakdown of the *Yukon* is fully in accord with that of McQuesten. Where accounts seem to disagree is in regard to McQuesten's intentions for Fort Reliance in 1883. According to Schwatka (1894) no trading posts would be operated upriver From Tanana (Nuklukayet) during the 1883-84 season. The trade at Fort Yukon, and this year at Belle Isle, was being taken care of by the itinerant McQuesten, trading from the *Yukon*. Fort Yukon had been closed since about 1880, though a number of Indians remained there under Chief Senati. It was there on July 27 that Schwatka met McQuesten. At the end of July McQuesten left on the *Yukon* for the location of Eagle, where, according to Schwatka, he was to conduct his trade and then leave, going back down the river. The post at Eagle or Belle Isle was not to be reopened. Nor was the one at Fort Reliance. Schwatka states that the Reliance post was abandoned and make no reference to McQuesten even planning to go there for ship-based trading. Schwatka evidently is correct regarding Belle Isle. In no account is any trader mentioned destined to spend the 1883-84 season at Belle Isle (or in the vicinity of Eagle), though there had been traders from two companies there the preceding season and Harper would go there in 1884-85. Mercier, who was a key figure in the Belle Isle-Eagle area, does not inform us of his activities during the 1883-84 season (Mercier 1986).

But Schwatka was at least partially wrong in reference to Fort Reliance, though we cannot be certain that McQuesten intended to spend a full season there (in contrast to a short opening or ship-based trading). McQuesten was careful to send word of his failure and new plans to the miners on the upper Yukon who were expecting him to reopen Fort Reliance. Schwatka does not appear to have recognized that this post annually closed for a period, generally during late May into August. He cites McQuesten to the effect that "he was sick of the Indians, the main tribe of which were peaceful enough, but contained several ugly tempered communistic medicine-men who had threatened his life in order to get rid of his competition in the drug business" (Schwatka 1894:245-46). However, this sentiment does not come through in my reading of McQuesten's "Recollections". It may be noted, too, that Schwatka's account contains some clear inaccuracies. For instance, he states that McQuesten had left Fort Reliance in the autumn of 1882, but it is documented that McQuesten was at Reliance from August 1882 to about June 1883.

Callahan (1975) records that her husband Chiroski (Cherosky) was interpreter for Mercier at Eagle one year, the next year they stayed at Tanana and there she met McQuesten, Harper and Mayo (Fig. 2.2), and for the next three years Chiroski again was interpreter at Eagle for Harper and Mayo. The chronology of these events probably starts with 1882-83 when Mercier established the ACCo post at Eagle (Belle Isle).

1884-85: Tenth Season, Eleventh Year

McQuesten ran his customary supplies up river with the *New Racket* with Mayo whom he left in charge at Fort Reliance. He returned to St. Michael, taking with him Willis Everette who had

spent several weeks purportedly sick at Fort Reliance while the traders were away. McQuesten then went outside to San Francisco to secure the first miners' supplies for Fort Reliance. These were not to arrive until the next season. There were no suitable work clothes, boots, or tools at Fort Reliance, nor were there adequate provisions other than flour, tea and sugar (McQuesten 1952:13). Five or six miners overwintered there that season. Among them was Dick Franklin. They did not have an easy winter. Allen (1887:142) states that most of the time they had only hare for meat, attempts by themselves and Indian hunters to obtain larger game notwithstanding. Fur trading continued to be important. Allen (1887:152) reported that the post received more black and silver than any other station along the Yukon--about 75 pelts.

1885-86: Eleventh Season, Twelfth Year

The tempo of mining activity on the streams above (south of) Fort Reliance was accelerating. McQuesten returned to Fort Reliance in August with 30 tons of miners' supplies (1952 "Recollections" states 50 tons), the first to be brought into the country for commerce. A corroborative note comes from Lt Allen (1887:90-91): "we reached the *New Racket*...and were joined by the *Yukon*. The former boat had miners' supplies aboard, destined for Fetutlin [Eagle] and Fort Reliance, which it carried for the first time; the latter the usual supplies for the natives." Before freeze-up McQuesten ascended the Yukon, taking miners up the Stewart River and going forty miles above Selkirk on the Yukon to trade with Natives. That winter, sixteen men stayed at Fort Reliance and vicinity.

This was a difficult year for the traders on the lower and lower-middle Yukon due to Native hostility. Anvik and Nulato were being closed or relegated to substations where creoles had a few supplies to trade, evidently on consignment, and Fort Yukon had been closed earlier. The only posts on the middle and upper Yukon (excepting Rampart House on the Porcupine River) were Fort Reliance (McQuesten and Mayo), Fetutlin or Eagle (Harper), and the Tanana or Nuklukayet station (Walker and Fredericksen). This situation invites further scrutiny: were the trading posts striving for greater volume through consolidation and closures, or had epidemics of the early 1880s reduced the size of the market? These questions, though significance to the history of the Yukon valley, are peripheral to our primary focus on Fort Reliance and will not be addressed in this paper, save for a brief discussion of epidemics in Chapter 7.

1886: The End of Fort Reliance

That spring, after breakup, McQuesten took the miners back to the Stewart River. During the summer the trading post was moved about 130 km up the Yukon, south to the mouth of the Stewart River. Harper and Mayo, skipper of the *New Racket*, were left in charge while late in the autumn McQuesten again went outside to San Francisco to confer with the Alaska Commercial Company in regard to receiving a larger consignment of supplies. The move to the Stewart River, where the post was named Fort Nelson after the Smithsonian collector, was a wise one. More than 75 men came on the river in the summer of 1886.

Not all were satisfied with the Stewart River, though some men made several thousand dollars in a single season. Franklin, whom we met earlier at Fort Reliance, went back down river and found good pay in coarse gold on the Fortymile River, about 75 miles above its mouth. A message was sent out to McQuesten to increase the size of his purchases. One of the messengers died as the result of the strenuous winter journey across the mountain passes to Dyea on the southeast Alaskan coast (De Armond 1973). In the spring of 1877 the Stewart River was nearly deserted and 200 more men came across the mountains to the Fortymile. In July, Mayo moved from the Stewart River to the mouth of the Fortymile and set up the store, at first in canvass tents. McQuesten had not yet returned by way of St. Michael with the goods from outside.

Buildings at Fort Reliance already were being scavenged for a raft by natives who wanted to get down river to the Fortymile (Wm. Moore in Chase 1947). Other accounts state that the buildings were "soon removed for boiler wood by the riverboats" (Coutts 1980) or that the post burned in 1904 (Jones 1967). Our archaeological tests failed to uncover any burned timbers, though the Dawsonite Jones appears to have had very specific but unreferenced information, including his own visits to the site. By 1896 only fallen remnants of the buildings were left. To build a fire for his overnight stay, Spurr was able to find enough of the remains of the old buildings "lying around in the grass" (1900:104-05). Subsequently, various observers have offered differing interpretations of the housepits at the site, a feature that stands in contrast to the rectangular outlines of cabins: Jones (1967) as the cellars of the three main buildings that had burned; Wharton (1972:24) as the "underground living quarters of the Indians who gathered around the station." Osgood (1971:85) speculated that the "cellar-like" houses reported at Reliance by Schwatka in 1883 were moss houses, but evidently he did not see the remains personally.

Reoccupation of the Site?

Kitchener (1954:153) reports that Harper returned to Fort Reliance in 1896, where he had a vegetable garden, before moving farther up the Yukon in 1897 to Fort Selkirk. However, I have been unable to verify this report, and Spurr reported Harper at Fort Selkirk in 1896. Spurr (1900:104-05) said that there was no one then at the site of Fort Reliance. Otherwise, no reports of later use of the old trading post site have come to my attention. However, several artifacts were found exposed on the surface or barely covered with litter, moss and turf. A few of these surficial items appear to belong to the Fort Reliance occupation, but most of most of them evidently are derived from later short-term use of the site.

2.4. NAMES AND NAME LISTS

Table 2.1 names all the persons recorded as having been at Fort Reliance, either as traders, client visitors, briefly on the supply steamer, or for other purposes, or who overwintered there. The list is based primarily on the two McQuesten documents and Mercier's recollections, including notes by L. Yarborough. It probably is reasonably complete for those who operated the

TABLE 2.1. PERSONS AT FORT RELIANCE BY YEAR

Name	Year Ending with Spring Breakup												Notes
	74-75	75-76	76-77	77-78	78-79	79-80	80-81	81-82	82-83	83-84	84-85	85-86	
L. McQuesten	o			o	o	o	o	o	o		v		Trader
A. Mayo		o	o								o		Trader
A. Harper		o	o										Trader
A. Kensley		?*											
B. Banfield	o												Trader, left for Alaska
F. Mercier	v						v						Established Fort Reliance, trader
Tom William(s)											?		Died 87 carrying message to Dyea. *Yukon* pilot.
Capt. Petersen									v				Capt. of *Yukon II*
Capt. Anderson							v						Capt. *St.Michael.*
M. Lorenz									v				Lawrence, ACCo agent, deptd. 1886
Mrs. Lorenz									v				Accompanied husb.
J. Minook (Wainuk)				o	?	?	?						Translator and famed prospector
J. Waldron													
Lt. Schwatka										v			Document source
Rev. V. Sims										V			Document source
W. Everette											o		Document source
Wm. Moore									o				Document source,
(Wm. Mer went out with scurvy, returned)													(2 Wm. Moores?)
J. Ladue									o		v	V	Trader, miner to 1897
J. Rogers									o				Miner
E. (J) Carr (Car)									o	v			Miner, met Sims
J. Boulene (John Bunyan?)									o?				Staff/miner, data conflict*
C. Powell									o		v	V	Miner
G. Spongeburgh (Spingerburgh, Spangenberg)									o				Miner
J. Miller									o				Miner

Name	Year Ending with Spring Breakup												Notes
	74-75	75-76	76-77	77-78	78-79	79-80	80-81	81-82	82-83	83-84	84-85	85-86	
J. Paris									o				Miner
P. Scofield									o				Miner
T. Kanals									o				Miner
2 unnamed (from group of 12, 10 listed above)									o				Miners
Poplin										v?*	v	o	Miner 1883-1896+
G. Marks										v?			Miner 1883 Stewart R.; 1884 Kuskokwim R.
C. McCoskey (Chas McConkey)***										v?	v		Miner
Benjamin = Ben Beach?***										v?			Miner
D.(Howard) Franklin											o	V	Discov. Fortymile, Wintered at White R. in 85-86?
John Fraser											o	o	Miner
Tom Boswell											o	V	Miner
F. Moffat (Mondfalt, Morphat)												o	Miner
J. Michael												o	Miner
I. Powers												o	Miner
P. Wyberg (Wilboring)												o	Miner
J. Chapman												o	Miner
A. Day												o	Miners, both Days
H. Day												o	stayed in region
S. Custer												o	Miner
H. Madison												v	Wintered at White R. in 85-86
M. Hess												V	Document source, mined on Fortymile and in Alaska.
J.B. Moore													V in 87, conflicting documentation

v: visited briefly, V: visited many days

o: overwintered or stayed a long period

* The only source found for the name Arthur Kensley at any time in early Yukon history is Wickersham (1938). Wickersham states that Kensley and Mayo tended the post in 1875-76 but other sources name Harper and Mayo.

** J. Boulene as a miner at Reliance and the trader in charge of Belle Isle. Possibly two different persons are involved. Prospectors probably passed through Fort Reliance in 1884 but found the post vacant.

*** McConky went in from Juneau in 1883 with Poplin, Marks and Ben Beach (Wickersham 1938:103). McQuesten (1952) refers to C. McConkey, Poplin, Marks and Wm arriving as a group at Tanana from farther upriver. Benjamin is a person who went to the Kuskokwim in the spring of 1884, but I am not certain that he was Beach.

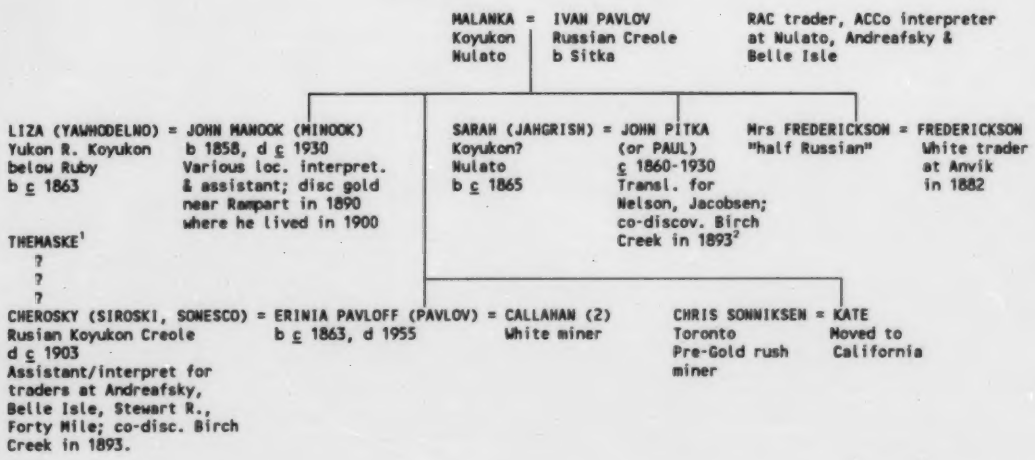
post and overwintered at Fort Reliance and in the vicinity, less so for those who visited. Names of both Native and white persons often vary between and within sources. This usually does not completely obscure their recognition, though I am not certain that Mercier's Jean Baptiste St. Louis (who overwintered 1882-83) is not the same person as McQuesten's John Boulene, and whether Boulene is J. Bunyun.

In addition, the Klondike (Dawson) Han Indian band lived near the post at Nuclaco and elsewhere in the area. The early records mention Chief Catsah (Cateah), who was visiting Fort Yukon in 1874, and Shenerthy (in 1876) by name. Possibly this is the Catsah who was with Campbell when Fort Selkirk was destroyed in 1852, inasmuch as 22 years later McQuesten referred to Catsah as an old person. Campbell's account was only partially transcribed because of illegibility but it refers to Catsah's more provident friends below [a location not far below the White River], probably in Han territory (Campbell 1958:138). Later, in 1883, Schwatka (1900:340) records the chief "Chil-tah" (intending Catsah?) and notes also the medicine man Ee-nuk, who had created trouble for McQuesten and a less troublesome medicine man Joseph. Sims also met the medicine man Enoch or Ino in 1883, and the son of Senati (Senati was a notorious Fort Yukon chief from the Lower Ramparts) was there at Nuclaco with two wives, a matter of much concern to Sims (Wesbrook 1969:42).

Later records from Adney (1900a) and Osgood (1971), including genealogies collected by R. Slobodin and C. McClellan) name persons old enough to have lived at Nuclaco and to have visited Fort Reliance, but some of these persons came from other areas after Fort Reliance was abandoned. No simple assumption can be made linking historic persons with the area. There was considerably mobility in the region at the time of the Fortymile and Klondike gold rushes, as probably there was earlier. Among the Han, band membership was permeable.

Very little has been recorded about the mixed Koyukon-Russian persons from the Yukon River who accompanied and assisted the traders and acted as interpreters. The traders usually referred to them as "Indians". Osgood (1971) identified the role of these agents as middlemen in conveying information to the whites about the Natives. Little also is written about the wives of the traders, most of whom were drawn from the same mixed population of the middle Yukon (Callahan 1975). Nineteenth century Alaskan-Russian usage termed this population "creole" (with small "c"),as also do some modern writers, but it lacked the distinct legal status that originally was conveyed to various classes of citizens during the Russian administration of Alaska. Figure 2.2 provides background information for a number of employees of the traders. One of these, Minook, became famous about 1893 for his discovery on Minook Creek. Earlier, he had attracted the attention of Allen (1887:137) who stated that Minook was considered one of the best

MEMBERS OF THE IVAN PAVLOV FAMILY


MALANKA = IVAN PAVLOV
Koyukon Russian Creole
Nulato b Sitka
RAC trader, ACCo interpreter at Nulato, Andreafsky & Belle Isle
LIZA (YAWHODELNO) = JOHN MANOOK (MINOOK)
Yukon R. Koyukon b 1858, d c 1930
below Ruby Various loc. interpret.
b c 1863 & assistant; disc gold near Rampart in 1890 where he lived in 1900
THEMASKE[1]
?
?
?
SARAH (JAHGRISH) = JOHN PITKA
Koyukon? (or PAUL)
Nulato c 1860-1930
b c 1865 Transl. for Nelson, Jacobsen; co-discov. Birch Creek in 1893[2]
Mrs FREDERICKSON = FREDERICKSON
"half Russian" White trader at Anvik in 1882
CHEROSKY (SIROSKI, SONESCO) = ERINIA PAVLOFF (PAVLOV) = CALLAHAN (2)
Rusian Koyukon Creole b c 1863, d 1955 White miner
d c 1903
Assistant/interpret for traders at Andreafsky, Belle Isle, Stewart R., Forty Mile; co-disc. Birch Creek in 1893.
CHRIS SONNIKSEN = KATE
Toronto Moved to
Pre-Gold rush California
miner

OTHERS

ALEXY:	Creole interpreter for Ladue in 1883 at Tanana and Charley's Village.
ANTOSKY:	Creole interpreter in the Nulato area prior to 1885.
DEMOOSKY:	Creole interpreter in the Nulato area prior to 1885.
ANDREW (ANDROSKY)	Creole assistant at Tanana in 1885 for Walker & Frederickson.

[1] In 1873 Monseigneur Clut baptised at Tanana a grand-daughter and grandson of F.X. Mercier's intrepeter "Themaske", a "half-Russian" (Mercier). Themaske would have been too old to be Cherosky, but whether or not the two are closely related, he is to be noted as a translater for the ACCo in 1873. A Telegraph Expedition account records, but does not identify a "Timaska" at St. Michael in 1866, who may be the same person.

[2] There was more than one Pitka at or in the vicinity of Nulato (sometimes spelled "Petka"). Possibly the person who travelled with Nelson in 1880 and was Mrs. Frederickson's brother is a different person than the Pitka who is related to Manook and is recorded as Paul in the Nulato church records or as John in the 1900 U.S. Census.

Figure 2.2. Some early Yukon River interpreters.

interpreters of the various Athapaskan dialects on the Yukon. Allen found him to be "a sensible Indian, who speaks English" [he probably also spoke broken Russian], and then, without any sociological objective in mind, Allen recited an incident illustrating that Minook lived in two worlds. What follows, in Allen's account (p. 433) is one of the best and few contemporary accounts of Athapaskan shamanism, observed by Allen at Tanana. The client: Minook.

Table 2.2 provides further information on the activities of the principal persons who operated Fort Reliance and adjacent trading stations. It gives the traders primary location during the cold months of the year. This table is drawn from a number of sources, not all of which are totally clear or in accord with one another.

2.5. THE HAN FIRST NATION

Han people occupied the region extending along the Yukon from a location just south of Dawson almost to Circle, about half way between the international boundary and Fort Yukon (Osgood 1971:Fig. 4) as well as the hinterlands east and west of the river. At the time of sustained European contact in the second half of the nineteenth century, three Han bands or population clusters were identified. The southern, Klondike band is associated with the historic sites of Dawson, Moosehide, Fort Reliance and Nuclaco, all located on the banks of the Yukon within a few kilometres of one another. People associated with this band but who actually were Peel River Gwich'in also lived in the eastern hinterlands on the Blackstone tributary of the Peel River (Greer 1990). Early in the twentieth century Blackstone people also lived as well on the Yukon at the mouth of the Twelvemile River, that distance below Fort Reliance. The other two bands had focal points on the Yukon at Eagle (David's or Johnny's village) and near the confluence of Charley River, Kandik River and the Yukon at Charley village). A detailed discussion of the distribution and complex and sometimes ambiguous nomenclature of Han bands, and information on early Han lifeways can be found in the publications of Osgood (1971), Crow and Obley (1981), and in the historic sources cited by these authors. It is pertinent to examine aspects of Han subsistence and settlement pattern that can help place in context the remains found at Fort Reliance.

Salmon was the primary subsistence resource of the Han. The fishing camps were located along the banks of the Yukon, although salmon also ascended tributary rivers such as the Klondike to spawn. People came to the camps several weeks or even months before the king and chum salmon runs reached Han territory in July. The runs peaked for a brief period, but some salmon continued to run until September. Often the camps were large, representing the whole band and visitors. Spurr (1900:105) reported probably 200 Indians fishing at the mouth of the Klondike in 1896. Schwatka saw approximately 150 persons, including visitors, at Nuclaco in 1883. The "Ayan" settlement Kah-tung (Northern Tutchone, who neighboured the Han to the north) below the mouth of the Pelly River, had 20 double brush houses and was the largest Indian village along the Yukon observed by Schwatka (1894:228-229). Schwatka clearly perceived these villages

TABLE 2.2. ANNUAL LOCATION OF THE FORT RELIANCE TRADERS

Year	F. Mercier	McQuesten	A. Harper	A. Mayo	Ladue
1868					
	Tanana Station				
1869	Pioneer Co.				
1870					
		Manitoba		With McQ?	
1871					
		Hay River		With McQ.	
1872					
		Nelson R.	Ft. St. John prospecting	With McQ.	
1873					
		100 mi below	Tanana R. &	With McQ.	
1874		Ft. Yukon	White R.		
	St. Michael	Ft. Reliance	Tanana R.?	Nuklekayet	
1875			prospecting		
		Ft. Yukon	Ft. Reliance	Ft. Reliance	
1876					
		Nuklekayet?	Ft. Reliance	Ft. Reliance	
1877					
	Estab. WF&T Co	Ft. Reliance	With Mayo?	Nuklekayet	
1878	near Tanana				
		Ft. Reliance	With Mayo?	Nuklekayet	
1879					
		Ft. Reliance			
1880					
	Ft. Yukon?	Ft. Reliance			
1881					
		Ft. Reliance	Tanana River		
1882					
	Belle Isle	Ft. Reliance	Nuklekayet		Ft. Reliance
1883					via Dyea
		Nuklekayet,	Nuklekayet	Nuklekayet	Eagle &
1884		boat disabled			Sixtymile
trading?					
		San Francisco	Camp David	Ft. Reliance	Stewart R.
1885		on business	& Koyukuk R.	prospecting	
	Montreal via	Ft. Reliance	Camp David		Prosp. out
1886	San Francisco				of Reliance
	No longer in	San Francisco	Ft. Nelson	With Harper,	Mined
1887	the North	on business		& steamboat	Fortymile
		Fortymile	Fortymile	Fortymile,	
1888					
		Fortymile			
1889					With
		Fortymile	Selkirk?*		Harper?
1890					
		Fortymile?	Ft. Selkirk		

Year	F. Mercier	McQuesten	A. Harper	A. Mayo	Ladue
1891					
		Fortymile?	Ft. Selkirk		
1892					
		Fortymile	Ft. Selkirk		Sixtymile
1893			& Sixtymile		trader?
		Fortymile	Ft. Selkirk	Nuklekayet	60 & 40 Mi.
1894					prospecting
		Fortymile		Nuklekayet?	Sixtymile
1895		or Circle			trading
		Circle		Tanana	Sixtymile
1896					trading
		Circle	Ft. Selkirk		Moved mill
1897					to Dawson
		Dawson ACCo	Departed ill		New York
1898			& broke		retired, ill
		San Francisco	Died 1898		
1899		retired			
1900					
				Rampart	
1901—		Died 1909		(Alaska)	Died 1901

* For 1889-90 Davis (1967:63) states that Harper and Ladue overwintered at the "Forks" of the Koyukuk River with the *New Racket*, a location significantly different from Fort Selkirk. McQuesten (1905) states otherwise. In 1882 Mayo went overland to the Koyukuk River on a brief trip.

as being semipermanent basecamps. The village of Kah-tung, he states, was used during the salmon runs and he remarked that "From the river as a home or base...they make frequent hunting excursions to the interior in the winter time for moose and caribou" (1894:228). Schwatka does not tell precisely what the people at Nuclaco were doing when he passed in mid-July, but he states that the principal diet of the inhabitants in the summer and early fall was salmon. Evidently, too, there was an intertribal gathering at this time with a large number of Upper Tanana Indians and other visitors "from above" present (Sims 1886). The Upper Tanana visitors may also have come to fish the salmon, as their home territory lacks a salmon fishery (Allen 1887, Guédon 1974). At Nuclaco Schwatka again noted brush shelters, but with considerable canvas (evidently covering the roofs, as was noted for Kah-tung). He visited two more Han settlements. At one of them, Johnny's village near present Eagle, with six houses, he saw salmon being netting and drying (Schwatka 1894:251-256). The six houses were airy pole or log cabins, bristling from the protruding ends of uncut logs, an architecture unlike that described for Kah-tung. As illustrated, the houses had gabled roofs (i.e., single ridge poles) covered, Schwatka states, with skins battened down by spruce poles. From Schwatka's description, it is evident that these were smoke houses or fish drying houses, utilized as well as shelters or dwellings. Interestingly, the inhabitants of Johnny's village may have arrived early in the spring, for Schwatka noted "Hudson

Bay toboggan sledges" on scaffolds (1894:259). The final, northernmost, Han settlement, Charley's village, reportedly was similar to Johnny's village. Nowhere in the descriptions of any of these river-bank settlements is there any suggestion of semisubterranean houses (this was not the time of the year to find people in these cold-season houses).

The period before the runs began was spent making or refurbishing equipment, boats and shelters. Salmon fishing techniques included dipnetting from canoes (reported by Schwatka in 1884 and for an earlier 19th century date by Osgood [1971 citing Strachen Jones]), spearing and harpooning from canoes (Osgood 1971:69, also seen in 1896 by Spurr), while fish traps are implied by the Han name for the Klondike River which translates "stone-for-driving-in-fish-trap-poles river" (Crow and Obley 1981:513). Osgood, however, reports that basket traps and weirs were used only on the tributary streams. The shallows off the bars at the downriver end of the island across from Fort Reliance nevertheless would have been suitable for the installation of traps according to procedures used on large rivers in Alaska. This bar or end of the island actually was the site of a lookout tower for spotting the wake of salmon coming up the river, which then would be dipnetted from canoes in the manner reported above (Percy Henry, personal communication relayed to D. Clark through Ed Kormandy, 1993). Salmon were dried and stored for winter use. Dried salmon were stored in birchbark-lined caches dug into the ground (Osgood 1971:89). Sims noted that during part of his stay at Nuclaco the men were away in the woods constructing fish caches, but he does not reward us with any hint of the type of construction (Wesbrook 1969). Other fish also were available in the rivers. The spring catch of grayling in the Klondike and Chandindu Rivers was important traditionally (R. Gotthardt personal communication to the author).

Other seasons of the year were the time of the hunt. The greater region of Dawson to Fort Yukon is known from historical sources to have had a substantial moose population when elsewhere during the second half of the 19th century, especially in western Alaska, moose numbers were very low. Adney (1900a) recounts an extended hunt at the end of the century during which 80 moose were taken. The communal caribou hunt also was a major source of meat and hides, and at times probably was more important than hunting moose. Nevertheless, there were times when the game could not be found and people went hungry.

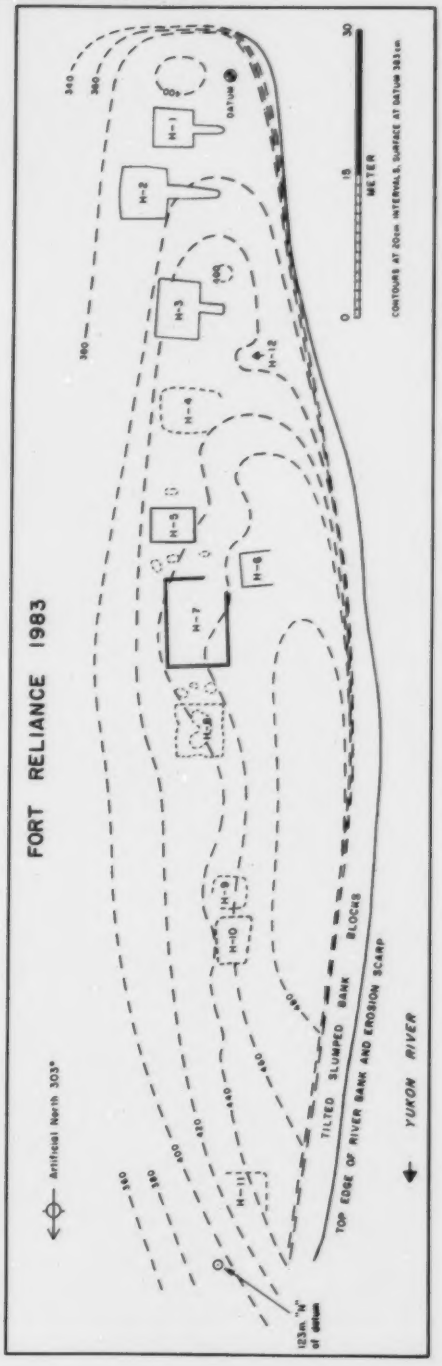


Figure 2.3. Map of Fort Reliance in 1983.

CHAPTER 3: DESCRIPTION OF FORT RELIANCE

This chapter describes what was seen on the ground, prior to excavation.

3.1. SETTING AND SITING

Fort Reliance is located on the right (east) bank of the Yukon River ten kilometres below Dawson, the gold rush city at the mouth of the Klondike River (Fig. 1.3).

Immediately in front of the site the Yukon River is moderately swift and deep to the edge of the well-sloped cobble shore (Fig. 3.1). A hundred metres up river, however, the channel veers to the west, and in its place along the shore are sloughs and low muddy islands. The bank at Fort Reliance is steep and has been maintained in this state through erosion so that it differs little from the way it looked 110 years ago to amateur artist Willis Everette. His sketch shows a ramp cut diagonally into the bank to gain access to the top from the shore.

Atop the bank, in a clearing, are the remains of Fort Reliance (Fig. 3.2). The clearing probably was forested before the post was built, as was the ground behind it. It now has occasional spruce trees of widely varying age, and is becoming reforested with poplar on its northern half. The ground is relatively level, though from inland it slopes upward very slightly towards the edge of the bank. From the site one can readily perceive that the location has a number of favourable characteristics shared with but few other localities in the vicinity. A steamboat could be drawn up close to the steep shore there. The site itself is sufficiently elevated to be safe from the highest floods and from ice shove and ice jams at breakup. Yet, it is no higher than is necessary and in this manner it differs from well elevated locations atop high steep banks or at far distances back from the water. In addition, the site is level and well drained. These qualities evidently were recognized by Mercier and McQuesten. The immediate hinterland, beginning at the edge of the clearing, is spruce forest. The forest probably is regrowth following extensive cutting during the gold rush, but the timber already has reached a size suitable for log construction. Slightly less than one km inland one comes to the old arcuate inner valley wall which one kilometre below Fort Reliance regains the contemporary river course, forming cliffs that plunge into the water (Fig. 3.1).

3.1.1. The Site Surface

One aspect of the site that merits study is the distribution of vegetation (Fig. 3.3). Clearing and human use of the site have altered the vegetation that was growing there prior to the trading post. The pattern of revegetation following abandonment may differ from the original cover and

Figure 3.1. The bluff below Fort Reliance, photographed from the shore in front of the site.

may reflect the manner in which the site previously had been utilized, including repeated cleared or trampling, and exposure of the ground to sunlight.

Some notes on the vegetation are recorded on Figure 3.3 Prominent at the face of the site is artemisia; in clearings there are grasses, fireweed *(angustifolium)*, roses (*Rosa acicularis*) and raspberries (*Rubus idaeus*); elsewhere grow spruce (*Picea glauca*), poplar (*Populus* sp) and shrub- and tree-size willows. Below the bank along the shore there are alders (*Alnus* sp), willows (*Salix* sp) and a varied suite of small plants rooted below high water level. The girth of the larger spruce trees growing on the site, at 1 m height, is 86 and 82 cm (27.4 and 26 cm diameter) for a pair of trees growing in House Pit 2, and 73 to 85 cm for four other trees. Trees of this and larger size grow off the site. A fallen tree of 65 cm girth in the forest behind the site was only 55-60 years old on the basis of growth rings. Therefore all the spruce growing on the site may have taken root during the present century and postdate the abandonment of Fort Reliance.

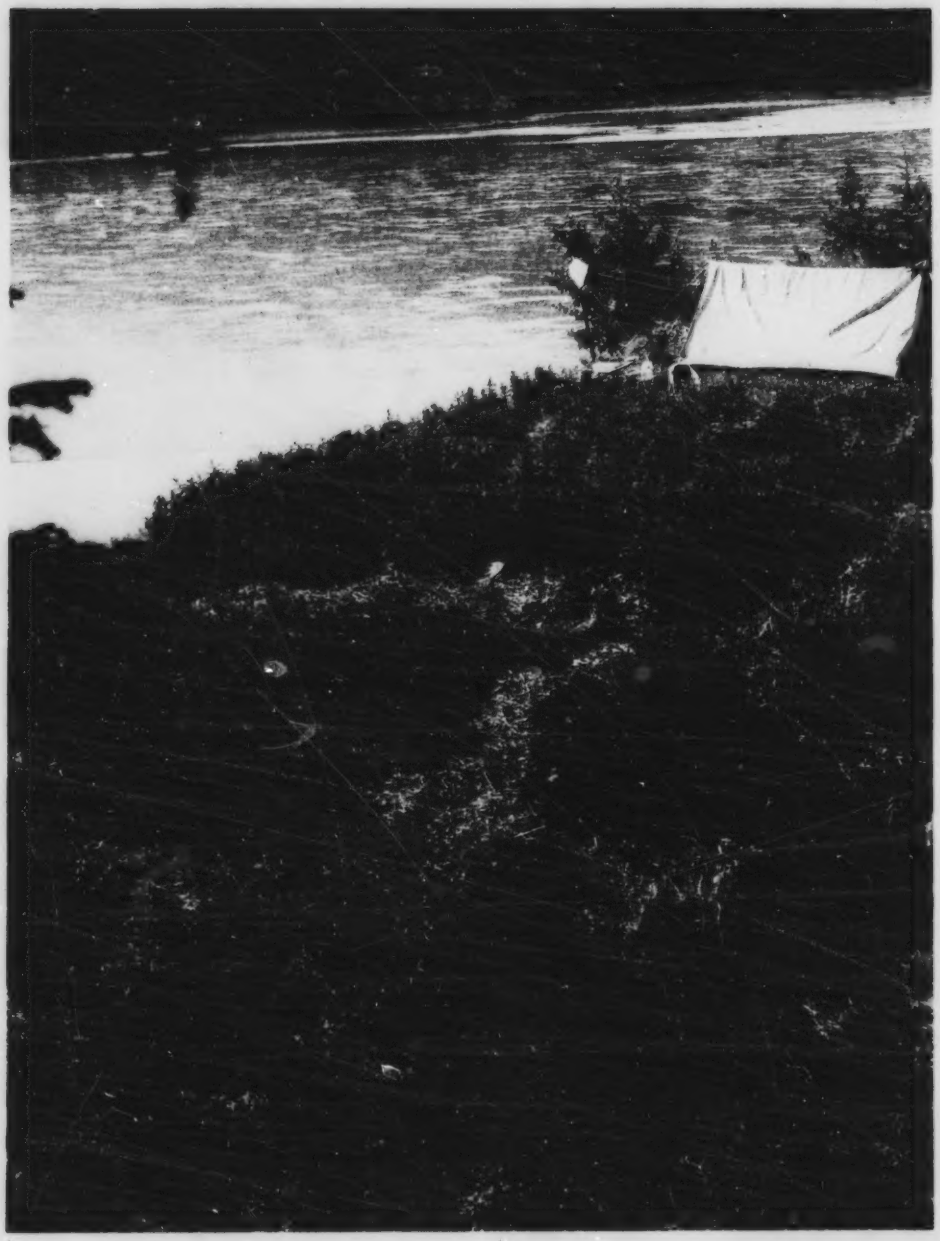


Figure 3.2. Panoramic view of the site extending from House 3 to House 7, taken from a spruce tree

growing in House 2. In the background on the left is the end of an island, possible site of Nuclaco.

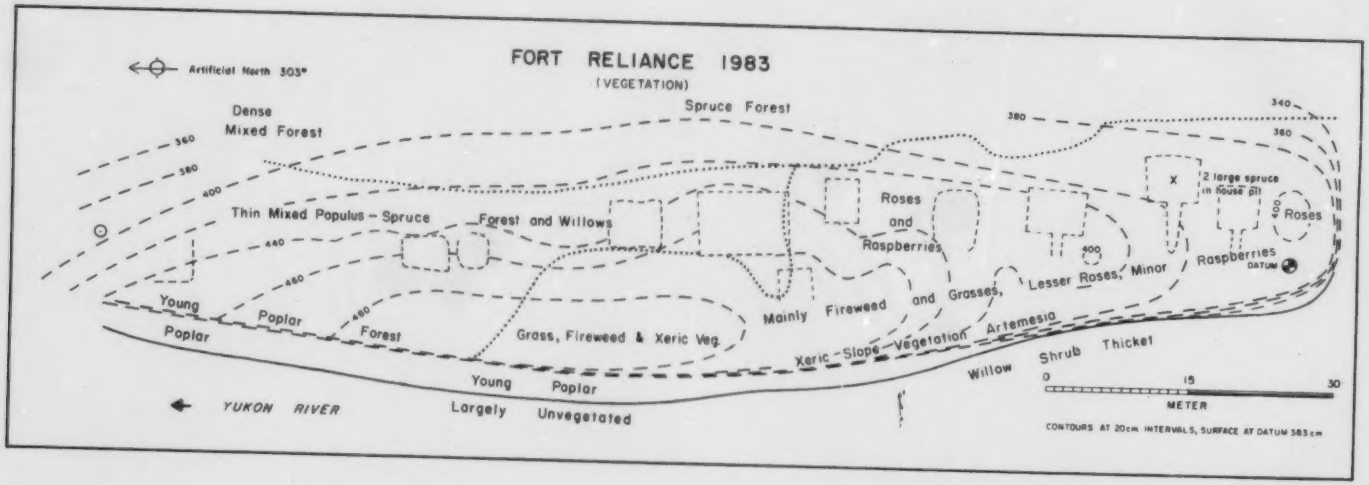


Figure 3.3. Map of the distribution of vegetation on the Fort Reliance site in 1983.

3.1.2. Resources of the Area

The site lies in the Klondike River ecoregion. A brief but comprehensive summary of the climate, physiography and vegetation of the region is available in Oswald and Senyk's report on ecoregions. Osgood (1971) provides a summary of the animal resources of the area, while the historical literature contains accounts of the moose hunts of the Klondike Indians (Adney 1900a). Two moose were seen at the site in 1983.

The primary resource that can be exploited successfully from Fort Reliance is the fish of the Yukon River, especially king and chum salmon. These are noted in historical accounts, and there have been, during the 1980s and early 1990s, a number of gill net sites and a small fish wheel in operation along the river within a few kilometres of the site.

Highbush cranberries (*Viburnum edule*), lingenberries or "lowbush cranberries" (*Vaccinium vitis-idaea*), and blueberries (*Vaccinium* sp) are three fruits that sometimes can be harvested in abundance near Fort Reliance. They can be kept in cool ground caches. There also are less abundant delicate bog cranberries and soft, pungent cloudberries. Highbush cranberries are especially plentiful at the base of the bluff a short distance down river from the site. Rose hips also are abundant, but Osgood reports that they were not utilized by the Han.

3.2. EROSION AND VANDALISM

3.2.1. Erosion

There is a cut bank exposure, obscured by thorny roses, at the gully at the south end of the site. This was one of the localities collected earlier by Hunston, but we did not see any artifacts exposed here in 1983.

Of far greater concern is the fresh erosion scarp that forms the bank along the northern or down-river two-thirds of the site. Surface collections made at the bank and along the shore of the river down to water level, where material is not likely to survive many seasons before being destroyed, show that at one time much artifactual material and refuse from the site had washed down the bank. It can be assumed that at least a few metres of the surface have been lost to erosion. However, no structure outlines are cut by the bank. Therefore, I surmise that the portion that has been lost to erosion consists primarily of dumps and bank-top work and activity areas. The distance observed between the edge of the bank and cabin base outlines today does not appear to be especially less than that portrayed in the Willis Everette sketch.

In addition, the outer edge of the northern two-thirds of the site, in places amounting to several metres width, has slumped and is tilted outward. A slump scarp up to two metres high runs along part of the site. A few artifacts and some fire-cracked rock and refuse bones were

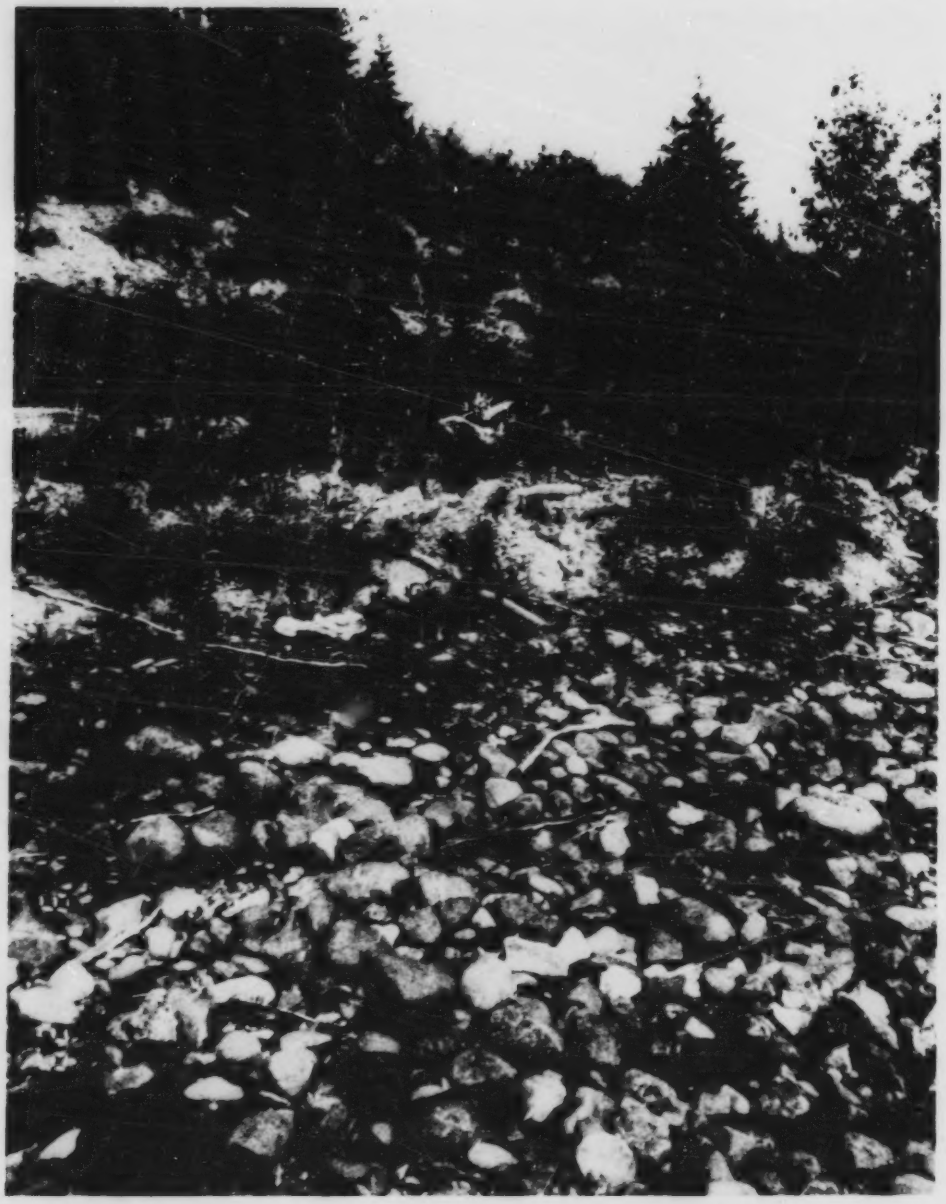


Figure 3.4. The washed shore at Fort Reliance with ice-shove/scarred bank and old erosion scarp in the background.

seen coming out of this exposure.

The bank exposures were reexamined in 1991. The upper bank had changed imperceptibly during the preceding eight years. The sharp fresh appearance of the exposure notwithstanding, erosion was proceeding at an extremely slow pace. The lower shore, to the edge of the water, presented the appearance of a more vigorously scrubbed high energy shore line than was the case in 1983 (Fig. 3.4). Sediment in which abundant wild chives grew then had been washed away. The cause may lie in the wake of excursion boats, especially the powerful predecessor to the present boat that makes six weekly round trips between Dawson and Eagle (in 1991).

3.2.2. Vandalism and Other Damage

In 1983 there was little damage to the surface of the site, other than a few pits including one in House 3, that could be identified as unauthorized excavation or "pot hunting." In 1991, however, a large number of very recent small disturbances was noted. Their form and pattern suggests that they were done to investigate signals picked up by metal detectors. As well, an access trail to a cabin recently erected behind the site is resulting in damage and erosion.

> Some probes had been backfilled; others were very shallow and likely are spots where metal artifacts had lain in the turf essentially on the surface. Fire-cracked rocks were piled up next to one of the larger disturbances. Metal detectors are known to respond positively to some kinds of "burned" rock.
>
> Under a sheet of plywood, from a pile of construction material recently placed next to House 1, I found a cache of three rusty metal cans (one in the process of being recycled into an implement. Two of the cans had moss growing on one surface and probably date to the Klondike Gold Rush. The third item (implement in progress) was encrusted with soil, apparently came from a greater depth and might belong to the Fort Reliance period of occupation. After finding the cans, I reexamined some disturbed areas in the House 1 entry. Some not only were sufficiently shallow that any artifacts there could have been positioned partly within the moss layer, but they also were smoothed bottomed. It appeared that someone had found and removed pieces like the three cached artifacts. They were not prime artifacts. As is common pot-hunter practice, the assembled haul apparently was evaluated and these "seconds" were left behind.

3.3. SURFACE FEATURES AND STRUCTURES

Surface features are recognized today as pits and depressions and outlines of rectangular structures. They will be described in three categories: semisubterranean dwelling depressions or house pits, rectangular surface structure (cabin) outlines, and miscellaneous small pits. Several of these features were tested or excavated, as is reported in Chapter 4. Dome-shaped hide-covered tents and canvas tents, the latter occupied by both miners and Natives, undoubtedly also were erected at Fort Reliance, but their placement can be discovered only through careful excavation and analysis of artifact distributions, and in many cases possibly not even then. There are no residual standing features on the site today. Larger spruce could have been integrated with the site features (posts for scaffolds and caches, as wind breaks, for aesthetics, etc.), but that does

not appear to have been the case judging from the absence of trees in the Everette sketch. Spruce presently growing on the site and vicinity likely postdate the trading post. The structures are listed in Table 3.1 and are plotted on Figures 3.4, 3.6 and 3.7.

3.3.1. Semisubterranean House Depressions

Three categories of house depressions are distinguished, although with complete excavation it may be found that all are variations of one or two types.

Rectangular Semisubterranean Depression with Tunnel Entrance

Three rectangular house depressions (Structures 1, 2 and 3) located at the south end of the site are four to five metres square (Fig. 3.5--3.7). Although the depressions have slumped, one test that reached the edge of the floor in a corner of House Pit 1 suggests that depression size is close to actual floor size. Berms, where present, fall slightly outside the floor limits. As they appear today, the pits are as much as 1.12 m deep, or 1.35 m to the buried floor, but this depth is in part an effect created by the soil berm around the perimeter (Fig. 3.6). The original depth of the floor below ground surface was in the order of 0.7 to 0.85 m. Each house has an entry trench. The length of the entry varies between 2.4 m and 5 m. Two small exterior pits associated with House Pit 1 are located close to the south and rear walls. They may have been for borrow used to bank the walls and cover the roof.

Partially-Infilled, Reoccupied Rectangular Structure

Evidence for reoccupation or reuse of depressed House 4 comes from a test trench described in Chapter 4. Surface expression consists of two distinct corners at the low, eastern end of the depression. Its depth lessens towards the bank and there are no distinct corners or outlines at the western end of the approximately seven metre-long structure. No entry trench is present; if ever there was one it has been filled in from collapse of the structure or later activity on the site.

Muted Rectangular Structure

A relatively small, more or less rectangular, partially filled in dwelling depression is identified as House 12. It has no visible entry trench, almost lacks any berm, and is much shallower and less sharply defined than the three rectangular house pits with entries (Structures 1-3) (Fig. 3.8). The pit, prior to excavation, was about 40 cm deep and approximately 3.5 m across.

3.3.2. Cabin or other Rectangular Surface Outlines

These structure traces (Structures 5--11), which I designate as cabin or house floors, consist of rectangular flat areas variously bounded by slight berms, by grooves in the ground apparently left from the removal of the bottom logs (especially at house Structure 7), or of level areas (floors)

TABLE 3.1. STRUCTURES AT FORT RELIANCE

No.	Type	Dimensions*	Notes
1	Semisubterranean with tunnel entrance	4.2 m x 4.0 m (transverse)	Tunnel trench is 3.1 m long, bottom below floor level.
2	" "	4.9 m x 5.9 m (transverse)	Tunnel trench 5 m long, bottom at floor level
3	" "	4.2 m x 5.7 m	Tunnel trench 2.4 m long
4	" ", partially infilled, then reoccupied?	≤ 7 m x ? m	Any tunnel trench is filled in. 3 m observed width may understate original W because of infilling
5	Rectangular surface outline (cabin?)	≤ 3 m x 4.4 m	Meas. to crests of narrow berm are 3.2 x 4.6 m. In Everette sketch?
6	" "	3.3 m x ≤ 4 m	Berm on 3 sides. Possibly small cabin in Everette sketch.
7	" "	6.2 m x 9.1 m	Large cabin in Everette sketch. Measured between centres of bottom log grooves.
8	" "	≤ 5 x ≤ 5.3 m	Medium cabin in Everette sketch. Edges irregular. Sub-floor pit.
9	" "	3.1 x 3.1 m	Flat area inside slight berm.
10	" "	≤ 3 m x ≤ 5 m	Edges not clear, 2 inside post holes spaced 0.95 m apart.
11	" "	≤ 3 m x 3+ m	Defined on 2 intersecting sides. No floor or artifacts found in TP.
12	Semisubterranean rectangular	Undetermined, small	Hearth on floor, partially infilled, no entrance trench observed.

* Dimensions for structures 1-4 are interior distances taken above the level of the base of the pit but below the crest of the pit. Because of slumping, pit base dimensions probably understate the size of the floor while distances between the tops of the berms overstate actual interior dimensions. Dimensions across the berms to their outer face are approximately 1.5 to 2 m greater than those given here.

cut into slightly sloping topography (Fig. 3.9---3.13). In some cases one or two sides of a structure are indistinct. Unlike the sunken features described above, these floors were not dug into the ground, although there is a very large pit in Structure 8 (Fig. 3.12). Other rectangular log structures probably were erected on the site but were not intended for winter occupation and were not banked. Upon removal of the logs, for firewood or other use, these features might not have left surface outlines of sufficient strength to persist to today.

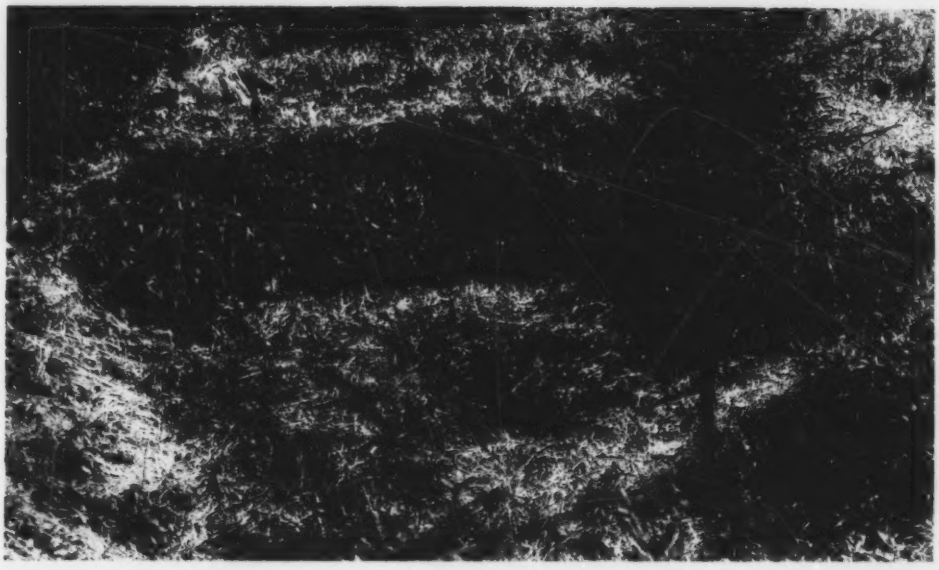


Figure 3.5. House Depression No. 1, entrance right (photographed from a tree in House No. 2).

Figure 3.6. House Depression No. 1, from entry, D. Thayer demonstrating its depth.

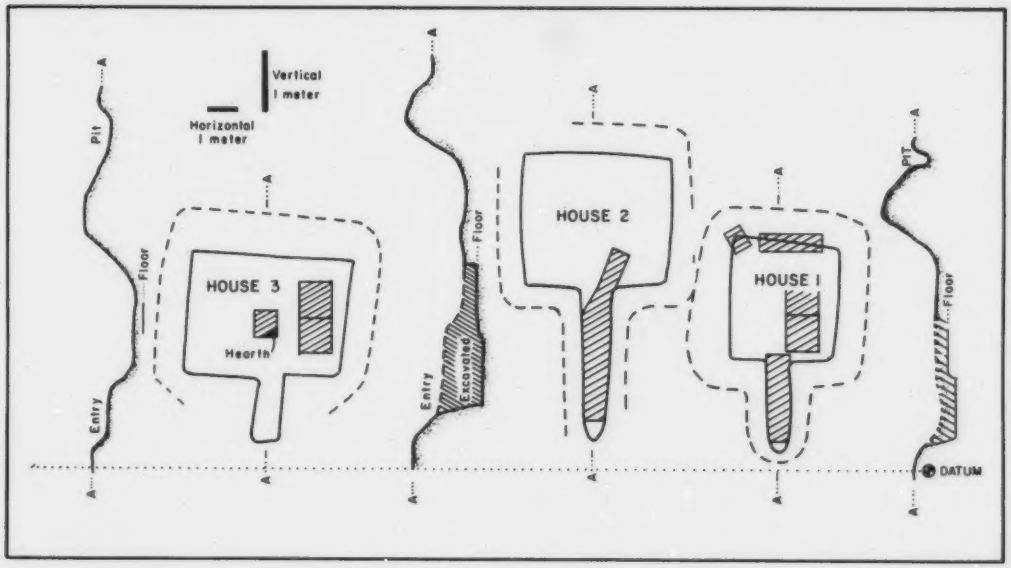


Figure 3.7. Drawing of House Depressions No. 1, 2 and 3.

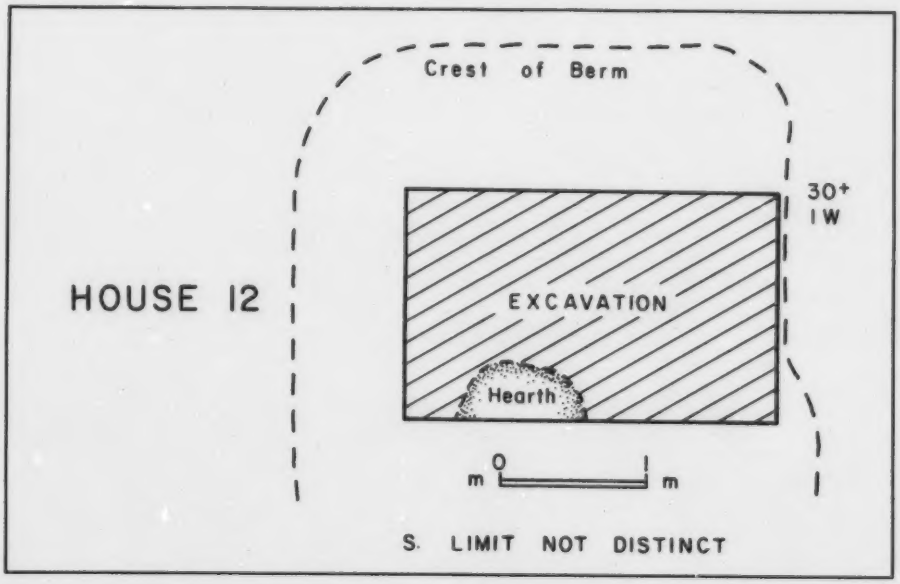


Figure 3.8. Outline drawing of House depression No. 12 showing the excavation layout.

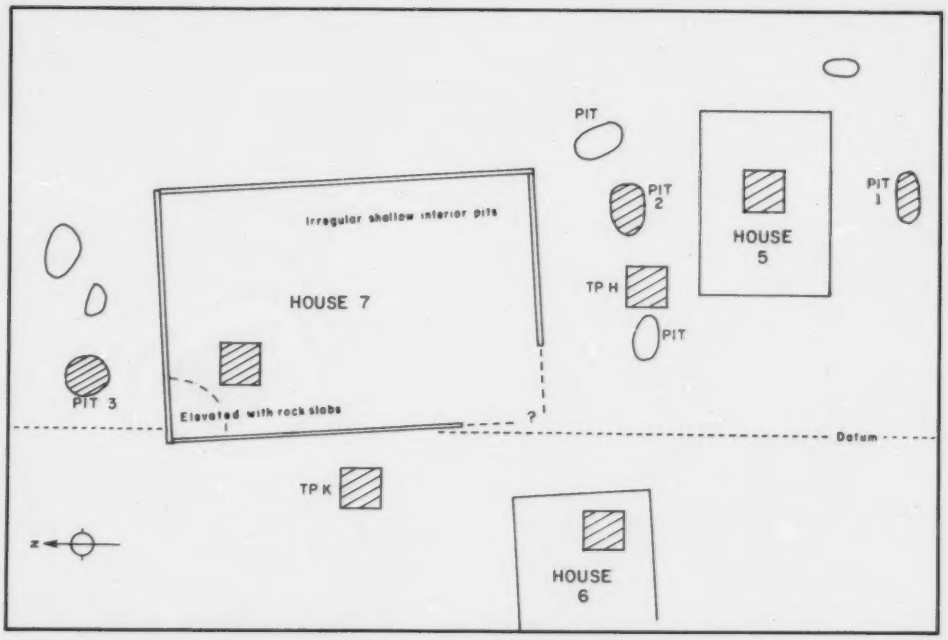


Figure 3.9. Drawing of House or Cabin Outlines No. 5, 6 and 7.

Figure 3.10. House No. 7, looking southward. The stake is just outside the northwest corner.

Figure 3.11. Wall groove at House No. 7 (structure interior is to the right).

3.3.3. Miscellaneous Pits

There are many small pits on the site (Fig. 3.14). Their purpose or origin probably is manifold, and in some cases one usage may have following another, as suggested below: (a) borrow pits; (b) in-ground refrigerator or meat and berry storage pits; (c) cellars--House 8 only; (d) old archaeological test pits and pot-hunter pits; and (f) pits dug at dog lots by the canids themselves and also wild animal dens, especially around House 7 where there are several small and irregular pits. Also bearing consideration, is use as (g) latrines; (h) smudge pits for smoke houses and hide smoking, and, though very unlikely, (i) roasting pits and (j) pits for storing or fermenting fish. Four pit features were excavated.

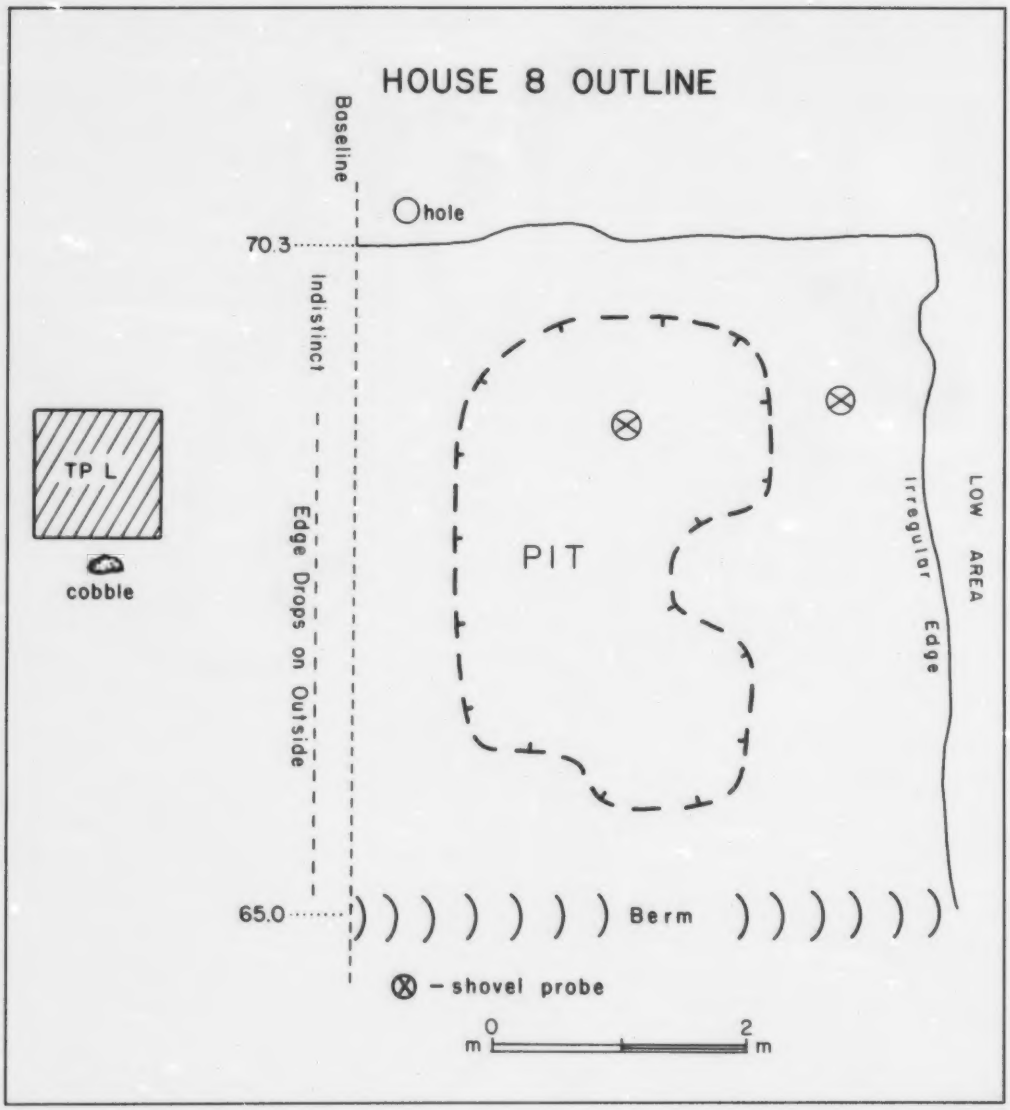


Figure 3.12. Drawing of House Outline No. 8.

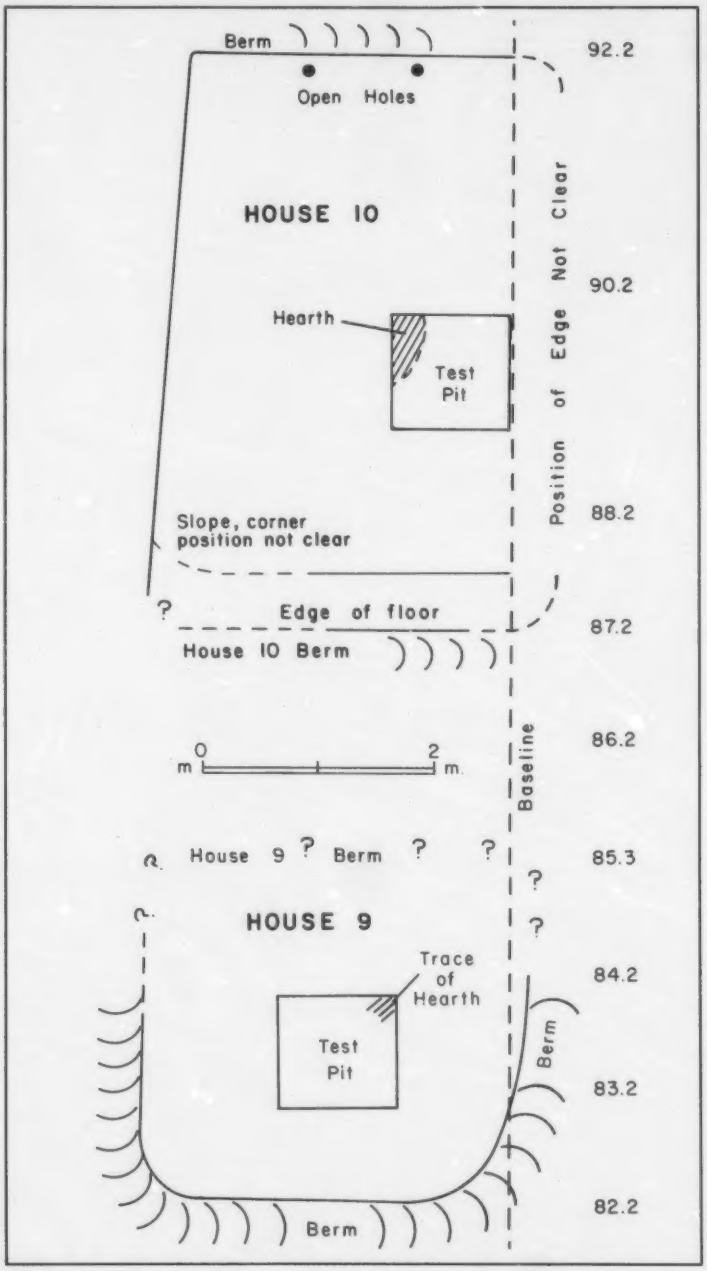


Figure. 3.13. Drawing of House Outlines No. 9 and No. 10.

3.4. COMMUNITY PLAN

Most dwellings probably had entrances that faced the bank and river, though this is not clear in some cases. Structures were aligned with walls parallel and perpendicular to the bank and course of the river. Euro-Americans likely would select almost automatically.

Other elements of the plan include the alignment, spacing between and clustering of structures. At the north end of the settlement the spacing and clustering is irregular. Possibly not all features are equivalent; some having been dwellings, some storage buildings, some possibly multipurpose structures. The greatest regularity of alignment in a row is in semisubterranean Houses 1-3 and possibly House Pit 4 which has a poorly defined front edge. It is possible that the location of both semisubterranean houses, which I interpret to have been occupied by Natives, and log buildings were determined by the traders. House 12 does not follow this plan. This Native dwelling differs from the others and appears to be the earliest semisubterranean house, though the artifacts recovered from the floor date to the period of the Reliance trading post.

Additional features of the community layout include the ramp cut diagonally into the dirt bank for access up the steep river bank. There also was a flag pole, shown in front of the largest building in the Everette sketch although one of the archaeological tests uncovered the base of a large pole several metres farther upriver. Another consideration would have been the supply of water. The Yukon is turbid, especially during the late spring and summer months. In 1983 we obtained clear water from a seep inland from the south end of the site. In 1991 this source was totally dry and a well, also dry, had been dug into the water course there to serve a nearby cabin.

Figure 3.14. Feature Pit 2 and unnumbered pit. The two stakes are at Test Pit H.

CHAPTER 4: ARCHAEOLOGICAL EXCAVATIONS

This chapter outlines the plan of the archaeological test and describes the results from selected features. It pertains to what was seen in the ground. Collections recovered are described in Chapter 5 and in the Appendices.

4.1. PLAN AND METHODS

4.1.1. Fieldwork

The 1983 Season

Examination of the Fort Reliance site in 1983 was part of a programme of archaeological surveys undertaken by the writer in the south and west-central Yukon in 1983. The writer was assisted by Deborah Thayer, COSEP student from Waterloo, Ontario, drove to Dawson, from the site of an earlier project, on June 30. Arrangements were made to go to the site by boat the next day, July 1. Testing continued until July 22 on which date we were picked up and taken back to Dawson. During this interval areas adjacent to the site also were examined. After the fieldwork, I searched the Yukon Archives in Whitehorse and the State of Alaska Historical Library in Juneau, with the assistance of archivist Phyllis DeMuth, for information pertaining to Fort Reliance.

The 1991 Season

During July 1991 I surveyed on the Yukon between Dawson and the Alaskan boundary. This permitted further examination of the region for archaeological data, especially housepits, that could be compared to Fort Reliance. Four days additional work was done at the Reliance site. These investigations were directed towards two problems that remained unanswered from the earlier work or arose as the result of that work. Specifically, no positive information had been recovered for the superstructure of the several semisubterranean houses at Fort Reliance. In fact, the housepits are very similar to some cabin foundations seen at early 20th century locations along the Yukon River and I wanted to further verify that that was not the case. Another problem, addressed through test excavation in open areas, was the need for more and better information on the provenience of lithic artifacts in order to distinguish between postcontact (historic) and precontact contexts. In addition, excavation at disturbed areas was done to evaluate the extent of damage from unlawful digging.

4.1.2. Excavation Plan

The objectives or questions to be answered through archaeological testing at Fort Reliance

stated in Chapter 1 were met in part through identifying and recording the distribution of surface features. This was followed by determining the nature of soil deposits and their potential to yield archaeological information, including artifacts, in every feature and in each area of the site between features, and by determining what kind of structural traces, such as floors and posts, remained in the features. It was proposed that in this way the potential of the site for various uses would be determined, and information would be recovered pertaining to the primary research problem which was to determine the relationship between the precontact and early contact period remains there and later use of the site by the Han.

The basic plan was to place test pits in each house floor and in front of, behind, and next to each house and in larger clear areas away from the houses. This plan was modified because of the closeness of some structures and the local presence of trees or thick shrub growth. Some excavation done in 1991 was directed towards specific areas of House 1 to obtain structural information, and some also was to assess the impact of "gophering" by pot-hunters. For the eleven structures and intervening open areas 34 test pits aggregating 53.8 square meters were excavated, 7 of them in 1991. Today Fort Reliance covers about 1900 square meters of which the area tested comprises about 2.8 percent. Five of these units were in House Pit 1. In addition, four feature pits were excavated. House or Cabin base No. 8 was not tested because of its complexly dipping floor with apparent cellar, but it was probed by shovel to determine the presence of a floor layer there. The location and size of these excavations is indicated in Figure 4.1 and in Table 4.1 where they also are briefly described.

Excavations started with 1.3-metre-square sections, but later it was considered feasible to reduce the size of test pits to one-metre squares. For the first three semisubterranean houses excavation locations were varied in order to represent all portions of the house. In House Pit 1 we excavated the entry, two test units near the south wall not extending to the edge of the floor, a linear section along the back wall including the edge of the housepit, and an angled section at one corner. In House Pit 2 only the entry trench was excavated because spruce trees would have made it difficult to excavate elsewhere inside. For House Pit 3, front and rear near-corner sections were excavated as well as part the centre in order to obtain information on the hearth. Because of its irregular sloping floor and lack of definition at one end, a narrow trench was excavated through House Depression 4. Large sections were excavated out of the middle and one side of House Pit 12, removing the greater part of that small structure.

4.1.3. Excavation Techniques

Excavation was done by trowelling, but wherever it was necessary the turf was cut and removed by shovel. All artifacts and larger refuse bones were recorded by two-dimensional grid and natural stratum. Point locations were recorded for common items (beads, pane glass fragments and nails) without particularized bagging of each similar item. The excavations were backfilled and contoured to approximate the ground surface or house pit prior to excavation.

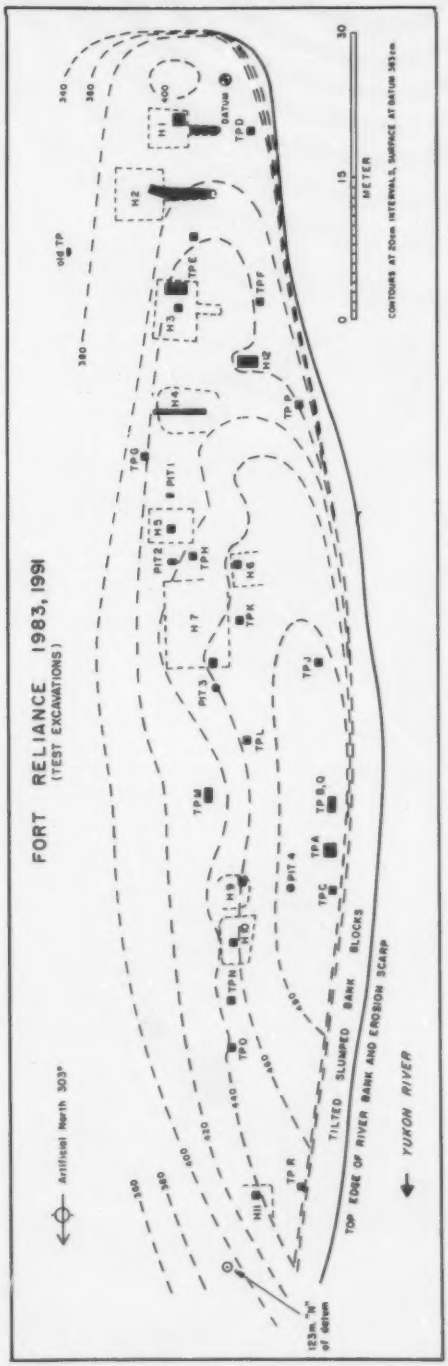


Figure 4.1. Fort Reliance site map showing the location of test excavations.

TABLE 4.1. FORT RELIANCE TEST EXCAVATIONS

No.	Location	Dimensions & Size Of Test Excavation	Stratigraphy
House 1 Pit 1	H1 front Left*	130x130 cm, 1.69m^2	Turf & organic-stained occupation; sandy fill; humic floor (main occupation). Specimens 86-151.
House 1* Pit 2	H1 middle L	112x125 cm, 1.56m^2	Turf; hearth deposit or mixed hearth and silty fill; floor ill defined. Specimens 1481-1524.
House 1* Tunnel	H1 all tunnel	80x380 cm, 3.34m^2	Turf; thick silty fill; then floor with needle litter. Specimens 1563-1595.
House 1* NE cor.	H1 rear Right	75x75 cm, 0.51m^2	Berm fill, original pit edge, slump, floor, post remains. Specimens 1525-1526.
House 1* Back	H1 back wall	50x300 cm, 1.5m^2	Turf; berm, slump; original surface; substrate. Specimens 1548-1562.
House 2	H2 all tunnel	80x600 cm, 4.8m^2	Thick silty fill (not sterile), occupation floor. Specimens 152-286.
House 3 SE cor.	H3 rear Left	130x130 cm, 1.69m^2	Sterile fill, stained floor. Specimens 287-312.
House 3 SW cor.	H3 front L	130x130 cm, 1.69m^2	Thick clayey fill, floor appears as a slight trace. Specimens 337-359.
House 3	H3 centre	100x100 cm, 1.0m^2	Superficial occupation trace; hearth deposits, main floor. Specimens 313-336.
House 4 E sect. W sect. W of W.	Central trench	75x700 cm, 5.25m^2	Turf & superficial occupation; hearths and complex stratigraphy. Specimens 360-597.
House 5	46.2--47.2 N 5.5--6.4 E	100x100 cm, 1.0m^2	Turf with occupation traces. Specimens 598-606.
House 6	50--51 N 1--2 W	100x100 cm, 1.0m^2	Lensed black; grey & red soil occupation under thick vegetal mat; yellow-brown substrate. Specimens 608-631.
House 7	59--60 N 1--2 E	100x100 cm, 1.0m^2	Complex, rotted boards, subfloor pit. Specimens 632-686.
House 8	65-70.3 N ç 4.8 E--.3 W	Shovel probes	There is a large irregular pit inside taking up 4/5 of the L & W. Shovel

No.	Location	Dimensions & Size Of Test Excavation	Stratigraphy
			probe found wood & cast iron vessel fragments 25 cm below base of this pit. Little found in TP L on W side of H8. Large river cobble there on surface. Shovel probe at E side outside the subfloor pit yielded flat glass, seed bead & moose mandible not collected. Stratigraphy: turf; organic layer with artifacts; 5 cm grey ash; another organic layer.
House 9	83--84 N 1--2 W	100x100 cm, 1.0m^2	Turf & humic stained occupation. Surficial--no fill over floor. Specimens 688-714.
House 10	89--90 N 0--1 W	100x100 cm, 1.0m^2	Humic surface, hearth deposit and hearth-stained occupation. Surficial--no fill over floor. Specimens 715-778.
House 11	115.1--1161 N 2.2--3.2W	100x100 cm, 1.0m^2	Turf; sterile silty soil substrate. No collection.
House 12 H12 H12 N pit H12 W pit	29--30.5 N 1.0--3.5W	150x250 cm, 3.75m^2	Turf; fill; buried turf; fill; floor with 2-3 occupation layers. Specimens 782-863 in H12, 880-917 in N Pi), 918-946 in W Pit.
TP A	79.26--80.86N 9.5--11.1W Open area near bank	160x160 cm, 2.56m^2	Turf & silt occupation layer; Much FCR & ash dumps starting 8 cm below surf., 2 distinct ash dumps & & calcined bone, red earth below one (hearth), top of 17x22 cm cobble 10-15 cm below surface, pre-contact artifacts in yellow-brown silty soil, later material above. FCR photo. Specimens 950-986.
TP B	75.26--76.26N 10.1--11.1W 3 m S of TP A	100x100 cm, 1.0m^2	Turf, silt, FCR occupation; brown silty soil, sterile? Like TPA but less pronounced and flakes are with FCR. Specimens 987-996.
TP C	83.86--84.86N 10.1--11.1W	100x100 cm, 1.0m^2	Grey silty soil with occupation grading into sterile brown silty.

No.	Location	Dimensions & Size Of Test Excavation	Stratigraphy
	3 m N of TP A		Attenuated version of TP A; no flakes, 10 cm thick cultural zone. Black and white beads in root zone. Specimens 997-1012.
TP D	5.36--6.36N 2--3 W	100x100 cm, 1.0m^2	Grey humic occup.; ash & FCR main occupation horizon. Spec. 1013-1023.
TP E	16.3--17.3N 2.7--3.7E Between H 2-3	100x100 cm, 1.0m^2	Sod, humic soil, trace of occupation; sterile silt; black soil from occupation; ash, burned wood, red soil with flakes. Specimens 1031-1041.
TP F	23--24 N 3--4 W In front H 3	100x100 cm, 1.0m^2	Humic, black & red-stained occupation layers; intrusive pit in corner contained late material (wire nails); sod layer had trading post items; sandy layer chert had flakes, FCR and bead; black layers a chert flake & clear-lined bead, red layer had nothing. Specimens 1042-1054.
TP G	39--40 N 8--9 E Near rear H 5	100x100 cm, 1.0m^2	Sterile turf & humic, thin; mottled, firm sandy & clay occupation layer 20 cm; then 4 cm of woody humic stained occup., beads & flat glass; 12 cm of mottled sandy clay substrate, cut nails & birchbark follow; 3-4 cm dark with wood at base; uneven substrate. Reflects proximity to trading post. Specimens 1055-1085.
TP H	49--50 N, 3-4 E 3--4 E Between H 5-7	100x100 cm, 1.0m^2	Turf; trace red-brown soil, light grey clay; occupation surface and old duff or turf next; (all below are sterile) another trace of red and brown soil; light silt substrate. Spec. 1086-1106.
TP J	60-61 N 9-10 W Near bank	100x100 cm, 1.0m^2	Turf with historic items; 9 cm of black soil, chert flakes; locally a sandy soil is inset into the black, flat glass & chert; precontact chert in 5 5 cm red-brown soil. FCR & fragments calcined bone in black and red layers. Specimens 1107-1127.

No.	Location	Dimensions & Size Of Test Excavation	Stratigraphy
TP K	55--57(56?) N 1--2 W W Edge of H 7	100x100 cm, 1.0m^2	Thin dark or red soil & intrusive pit; greenish tan sand with organic occupation streaks. Specimens 1128-1205.
TP L	68--69 N 1.5--2.5W W edge of H 8	100x100 cm, 1.0m^2	Sod & humic stained; red-brown soil and FCR otherwise sterile; yellow-green substrate. Historic artifacts and chert flake in sod-humic zone. Specimens 1206-1216.
TP M	75--75 N 1.5-2.5E Surficial beads	100x200 cm, 2.0m^2 Slightly irregular	Grey-stained sandy soil &/or humic matter, 6-8 cm, abundant beads; thin dark-brown soil changes to light-brown sandy substrate. Chert below historic artifacts. Specimens 1217-1263.
TP N	95--96 N, 0-1 E	100x100 cm, 1.0m^2	Humic soil; sterile substrate. Specimen 1264.
TP O	100--101 N 0--1 W	100x100 cm, 1.0m^2	Turf & humic stained occupation for 6 cm, with chert flake and historic artifacts; grey-brown soil & substrate, sterile. Specimens 1265-1293.
TP P* Flagpole		100x100 cm, 1.0m^2	Intrusive pit with pole; turf, FCR, sandy silt; brown soil with lithics & calcined bone outside pit for pole. Specimens 1539-1547.
TP Q*	74.26--75.26N 10.1--11.1W Joins TP B	100x100 cm, 1.0m^2	Turf; sandy soil with lithics & FCR, possibly precontact age. Specimens 1527-1538.
TP R*	N end of site, edge of bank	100x100 cm, 1.0m^2	Sandy grey-brn soil, 1 lithic, no distinct occupation layer. Specimen 1478, 1480 at bank.
Old TP	18 N, 16.1 E	80x50 cm, 0.4m^2	Expanded old TP (MacNeish's?); Turf, organic stained silt; sterile silt. Specimens 947-949.
Pit 1	Feature Pit 1 S side H 5	Subrectangular	Fill. No collection.
Pit 2	Feature Pit 2 Between H 5-7	Subrectangular	Fill. No collection.

TABLE 4.1.--CONCLUDED

Pit 3	Feature Pit 3	Circular		Specimens 1294-1374.
	63.25 N, 1.2 E	1 m dia,	$0.8m^2$	Fill & dumped refuse.
Pit 4	Feature Pit 4	Circular		Several fill layers.
	H 9 to bank	1 m dia		Specimens 1387-1394.
Surface	Whole site	Top of site		Surface. Specimens 1444-1476.
Bank	Erosion face	---		Displaced. No. 1395-1443, 1479.

* 1991 excavations. The terms "right" and "left" are for the orientation of a person located inside the house who faces the entry.
FCR = Fire-cracked rock.

To facilitate relocation of the 1983 excavations, section corner stakes were left in place or they were pulled and replaced by stakes set in the interior corners of the sections. By 1991 approximately half of these wooden stakes had been broken off and the sections had become largely revegetated. Two plastic tent stakes were set below the surface in the flagpole test or TP P in 1991. The other units excavated that season were left unmarked but can be located on the basis of their position relative to 1983 units. An aluminum pipe was driven into the ground at the zero point at the upriver or approximate south end of the baseline. In 1991 this stake was found bent over but remaining in place. The baseline direction (down-river) was designated north, and actually is close to true north; right-angle offsets were measured east (inland) and west (towards the river) to record the position of pits and features.

The remaining sections of this chapter describe the stratigraphy of the site and features excavated. Examples are selected to illustrate the features and stratigraphy within houses, feature pits, and exterior test pits. Considerable attention is given to the semisubterranean houses, focusing on House 1. Finally, a synthetic sketch is provided detailing the process of house construction A complete list of excavation capsule descriptions is to be found in Table 4.1. We begin with the simplest case, that of test pits in featureless open areas

4.2. STRATIGRAPHY OF TESTS IN AREAS AWAY FROM STRUCTURES

The examples discussed here illustrate particular elements of site stratigraphy found outside feature pits and structure floors.

Test Pit K (Fig. 4.2) shows stratigraphy influenced by the proximity of a cabin, House 7. The slight turf and thin dark grey to red-brown soil at the top of the profile probably developed after

the site was vacated. The tan silt layer could be material that slid off the roof of House 7. A clue to this possible genesis is the fact that this layer is much thinner away from the house wall than it is closer to the house. This test yielded heavily of flat glass, cut nails and beads, reflecting close proximity to the trader's cabin. An interesting feature in this section is the 1-cm-thick basal organic layer which I interpret as a needle and litter layer that had developed below a spruce forest on the site before the trees were cut off and Fort Reliance was built. At this location artifacts occur only in the top of this buried litter layer; none are found below it.

Figure 4.3 shows Test Pit E located between Houses 2 and 3. This profile shows hearth deposits and other indication of activities outside the recognized houses. Possibly the former presence of temporary surface structures is reflected. The distinctive strata clearly show human occupation of the site. Chert flakes and trade items (a small metal cross and glass beads) were found in the black soil streak. The red soil matrix also contained a few chert flakes. Burnt wood probably representing a single event was found in both the black soil and the reddish layer and this may account for the genesis of the black, ash and red layers. The chert flakes may be derived from an occupation predating the imported European artifacts. This is a question that might be resolved in a larger excavation.

The final figure in this series, Figure 4.4, shows the thin deposits of Test Pit D located in front of House 1 near the edge of the bank. This may have been a refuse disposal area, but it is more likely that this was a work area before the width of the site was reduced by erosion. Deposits are streaked with ash and contain fire-cracked rock, apparently disposed of there from cleaning out hearths. A similar sequence with pockets of layers of ash, in some cases considerable fire-cracked rock, and calcined bone, was found elsewhere near the edge of the bank, usually in thin layers but locally, as at Test Pit A, up to 50 cm deep (Fig. 4.5). At more than one of these locations, including Pit D, chert or obsidian flakes were found in soil below the level of historic trade goods. Pit D yielded poorly, but in addition to the deeper flakes, a chert flake was found associated with a white bead in the ash zone. Most of the fire-cracked rock probably is derived from the stone boiling cooking technique. It follows, then, that the deposits of fire-cracked rock should largely predate the adoption of metal kettles, which makes them precontact or early contact in age.

4.3. STRATIGRAPHYOF SMALL FEATURE PITS

The feature pits, unlike the test pits, are excavations produced by the inhabitants of the site for various purposes. Their investigation was limited to removing the fill, thus providing information on the size and shape of the original pit and the contents which in many cases reflect secondary use of the pit. Each one that we investigated is noted here. The pits are open depressions, but to some extent each has been filled and reduced from its original depth, either through the deposition of refuse or through slumping of the walls.

Pit 1 is located 1.6 metres from the south side of House 5. Removal of old turf and sloughed

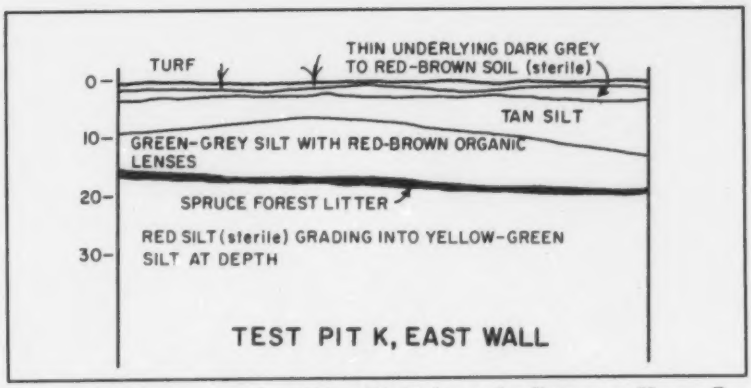


Figure. 4.2. Stratigraphy of Test Pit K, located adjacent to House 7.

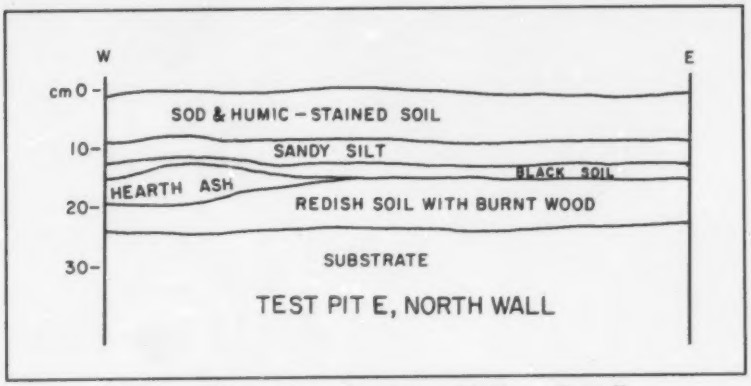


Figure 4.3. Stratigraphy of Test Pit E, north wall.

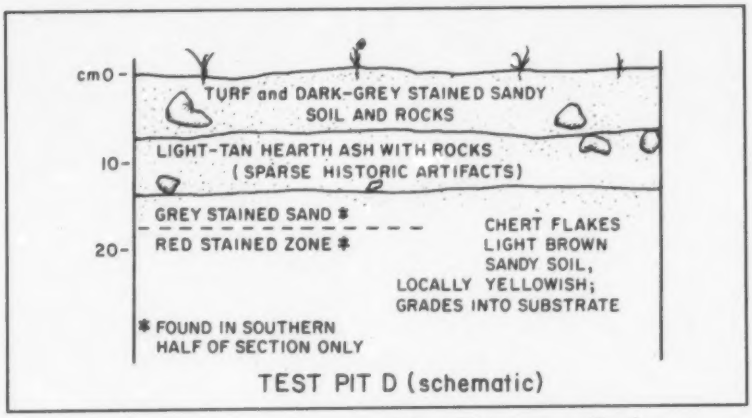

cm 0
TURF and DARK-GREY STAINED SANDY SOIL AND ROCKS
10
LIGHT-TAN HEARTH ASH WITH ROCKS (SPARSE HISTORIC ARTIFACTS)
GREY STAINED SAND *
20
RED STAINED ZONE *
CHERT FLAKES
LIGHT BROWN SANDY SOIL, LOCALLY YELLOWISH; GRADES INTO SUBSTRATE
* FOUND IN SOUTHERN HALF OF SECTION ONLY
TEST PIT D (schematic)

Figure 4.4. Stratigraphy of Test Pit D, generalized.

sediment revealed undisturbed sand at the bottom of the subrectangular pit at slightly more than 50 cm depth below the surrounding surface. No artifacts were recovered.

Pit 2 is located between House 5 and House 7. Items were exposed at the surface and found amid loose turf and organic matter in the upper portion of the pit fill include metal cans of old format (with soldered filler-hole discs), green glass sherds from a large jar, a rotted rain coat with metal snaps, two wire nails, and a fragment of flat glass. Sherds of the green glass were followed downward through loose fill to the base of the pit where there were large quantities of prune pits and egg shells. The subrectangular pit was approximately 60 cm deep, but depth varies according to the point on the locally irregular surface used for reference. The contents of this pit postdate Fort Reliance and could even be late in the context of the Klondike Gold Rush. All material found in the pit was returned to the excavation.

Figure 4.5. Fire-cracked rock encountered in the excavation of Test Pit A, a 2.5 square metre area.

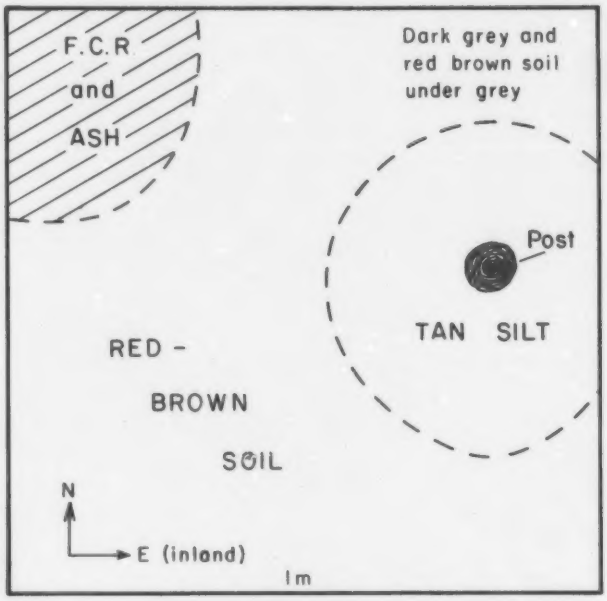
Pit 3 is a circular pit centered 2.1 m north of House 7. Numerous artifacts, many of them burned, trash and ash had been dumped into this one-metre-wide pit. Judging from the nature of the contents, the store keepers or miners living in the trading post used the pit to dump trash and the cleaned-out contents of their stoves, but originally the pit probably had been dug for some other purpose.

Pit 4 is a metre-wide circular pit, narrowing to 55 cm diameter at depth. It is located between House 9 and the river bank. In it the following sequence of fill was encountered: (a) sod surface 35 cm below the surround ground; (b) tan-brown sand extending to 55 cm below the surrounding surface; (c) hearth ash from 55 cm to 85-90 cm, containing at the top a few large bones and within the ash calcined bone fragments, a bead and a small metal wedge; (d) an old sod layer; (e) in and just below that sod and extending to 95 cm depth were a few bones, beads, and a tabular hide scraping stone and other artifacts; (f) and below 95 cm the grey powdery silt of the substrate.

4.4. THE FLAG POLE

Willis Everette's sketch shows a flag pole near the main building. The buried stub of an apparent flag pole was discovered fortuitously in Test Pit P, a metre-square test made in 1991 to investigate a recently potted cluster of fire-cracked rock. Potting may have been triggered by a strong signal from the heated rock, registered on a metal detector, or by a metal artifact, subsequently removed. The post or pole is positioned farther upriver than the pole shown in the Everette sketch, but I consider its identification as a flag pole more likely than any other possibility on the basis of a) the considerable depth to which the pole was set into the ground, b) the size of the pole, and c) its vertical orientation.

The pole is 1.5 m in from a slump scarp at the bank, a position originally probably farther back from the bank. To facilitate its relocation a yellow plastic tent stake was placed in the ground at the NE corner of Test Pit P and another yellow stake in the top of the post, both completely below the surface and covered when the pit was backfilled. The soil types and position of the post, as encountered at a shallow depth in this pit, are shown in Figure 4.6. Hearth deposits consisting of fire-cracked rock and soily ash along with some burned bone fragments were concentrated in the northwest corner of the pit. This probably is the source of the rock displaced and exposed by potting. I am not wholly certain whether this occurrence is a primary hearth deposit or a dump of hearth refuse. However, at the same level as the hearth deposits there is red-brown soil containing numerous fragments of burned bone. The bone probably was disseminated from a primary hearth represented by the fire-cracked rock and ash. A few historic artifacts were found in light grey soil stratigrapically above the red-brown soil or in fill around the pole. Several chert flakes were found within the red-brown soil, mostly at relatively shallow depths, 10 cm for instance, but as deep as 19 cm. With increased depth the soil (excepting the fill around the post) became less red and devoid of calcined bone fragments, and, with additional depth it turned into a light yellow-cream coloured soil. This soil succession occurs



Flag Pole Test Pit "P" Soils Below Turf

Figure 4.6. Plan of the "Flag Pole" test pit (TP P).

within a relatively brief interval, 14 cm to the yellow-cream soil along the south wall and 14 to 19 cm along the west wall for the whole sequence.

The rotted top of the pole was found immediately below the surface. With further excavation the presence of a large filled pit, around the post, became evident on the basis of pronounced soil differences. The pit fill was removed to the base of the post, with care taken to disturb the post as little as possible. Its diameter, based on measurement of the circumference, is 16.2 cm. When in the bark, the original tree would have been slightly larger. The base of the post was finally reached at exactly one metre below ground surface. Traces of rotted vegetation and fire-cracked rock were found deep in the fill, but there were no artifacts befitting a flag-pole raising ceremony. The presence of the hearth deposit in this test pit undoubtedly is coincidental and, if the hearth and chert artifacts are coeval they may substantially predate the pole and European artifacts found at the same location.

4.5 RECTANGULAR SURFACE STRUCTURES

The apparent cabins (Structures 5 through 11), which appear as rectangular outlines, usually have a simple stratigraphy without well defined floors, the large structure House 7 being an

exception. This situation might be expected if floors were planked and raised off the ground.

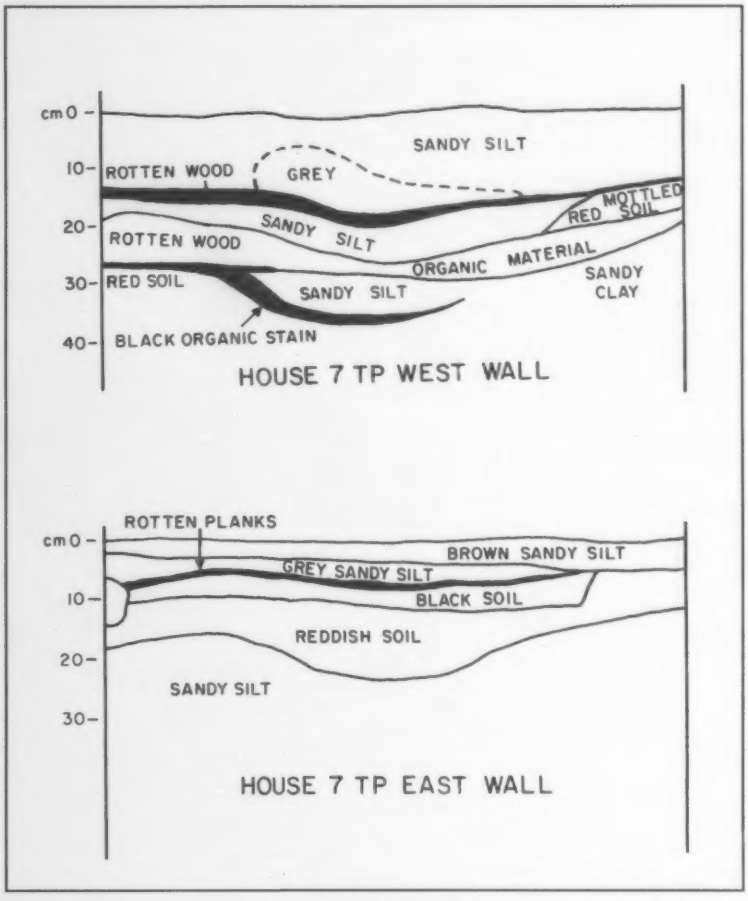
The floor and fill of House 7, the largest cabin on the site, shows a very complex stratigraphy (Fig. 4.7, 4.8). Future excavators should be aware of the challenges posed by this structure. A depression below rotted wood (planks?) contained many seed beads. The interior of Structure 7 is further complicated by several irregular shallow depressions and by a low mound of soil and stone slabs located in one corner. The last is smaller than stone and clay mounds that commonly remain from fireplaces and chimneys. No traces of mud and stone fireplaces were seen in the other structures. Some stone slabs also are present elsewhere within the house. These slabs are not available from the shore in front of the site.

House 9 exemplifies a simple stratigraphy (Fig. 4.9) consisting of turf and brown-grey sandy soil which contained artifacts. Locally, under the sandy soil there is black soil surrounded by soil of a faint reddish hue that may be the result of burning. Below that is sterile sediment. House 9 and 10 almost touch and their demarcation at the proximal ends is not clear. The possibility that these structures were joined may be considered.

In House 5 (figured in plan only) a substantial quantity of fire-cracked cobbles (originally *c* 15 cm in size) was uncovered below the turf in the southern half of the centrally located test section. Below that there was dark-stained soil and then red tinted silt above tan silt. All layers were thin, measuring together only 10 cm. The red staining may be due to a hearth. Except for the turf, and in humic dark-grey sand encased in the roots, this sequence was sterile of both artifacts and faunal remains.

In some respects the stratigraphy of House 6 (Fig. 4.10) is similar to that of House 9, but the burned (oxidized) soil is more extensive and occurs in lenses which may be a result of there having been multiple hearths or fires at this location. Otherwise, no distinct floor layer was identified for this structure. Historic-period artifacts were found in the humic layer and black coloured lenses, but not in the red soil. The latter may be derived from the yellow hued sterile substrate altered by heat.

There are few features within the rectangular surficial structures. Occupation or artifact bearing layers, underlain by sterile deposits, were recognized but no distinctive floors were found. This situation is to be expected in some cases inasmuch as some cabins probably had wooden floors which subsequently rotted if they were not pulled up for firewood. Moreover, not all structures may have been dwellings, and these would not have been provided with hearths or stoves. Nevertheless, a large hearth deposit was found on the floor of House 10 (Fig. 4.11). During some period of its occupancy this house had no wooden floor and an open hearth sufficed. The associated historic artifacts show that the occupants were Natives, but some early prospectors in the Yukon lacked stoves and are known to have made open hearths on the dirt floor. More excavation might reveal hearths on the ground at other cabins.



Figures 7 and 8. Stratigraphy of House 7 Test Pit, west and east walls.

A large interior pit is located inside House 8 (Fig. 3.12), and for this reason the House was not tested other than for two small shovel probes. These showed that cultural material was present at the base of the pit fill. The pit could have been a cellar for cool storage. The small pits and dirt and stone slab mound in House 7 were not investigated. The irregular, shallow pits are suggestive of ones dug by dogs where they are tethered and may postdate the structure.

4.6. HOUSE 12, A SMALL SEMISUBTERRANEAN STRUCTURE

Considerable information about this structure and its history is revealed in the three successive

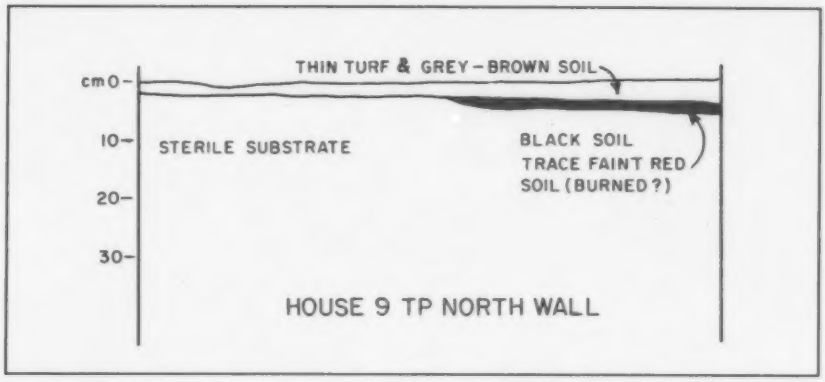


Figure 4.9. Stratigraphy of House 9 Test Pit, north wall.

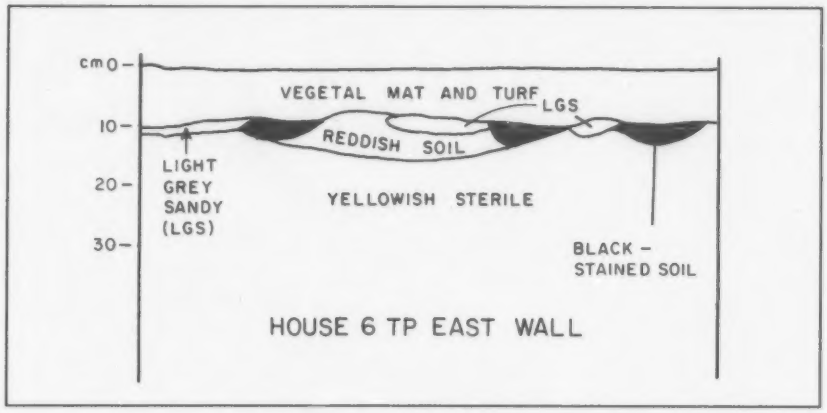


Figure 4.10. Stratigraphy of House 6 Test Pit, east wall.

sections shown in Figures 4.12--4.15. In brief, these show a distinct floor, the east edge of the structure, part of the hearth, and a manifold history of filling and accumulation after the structure was abandoned. Some artifacts were recovered from the fill as well as from the structure floor. There is no entry trench, unless one is obscured by later filling, and the walls or edges of the depression are less sharply defined than those in the three principal semisubterranean houses (Houses No. 1, 2 and 3). House 12 also is smaller than the others. These elements taken together indicate that a different type of structure is involved. House 12 seems to be a smaller one-family version of the larger houses (without entryway or one obscured by later fill). Artifacts recovered from the floor show that this house is fully historic and belongs to the Fort Reliance period of occupation, when the trading post was operated.

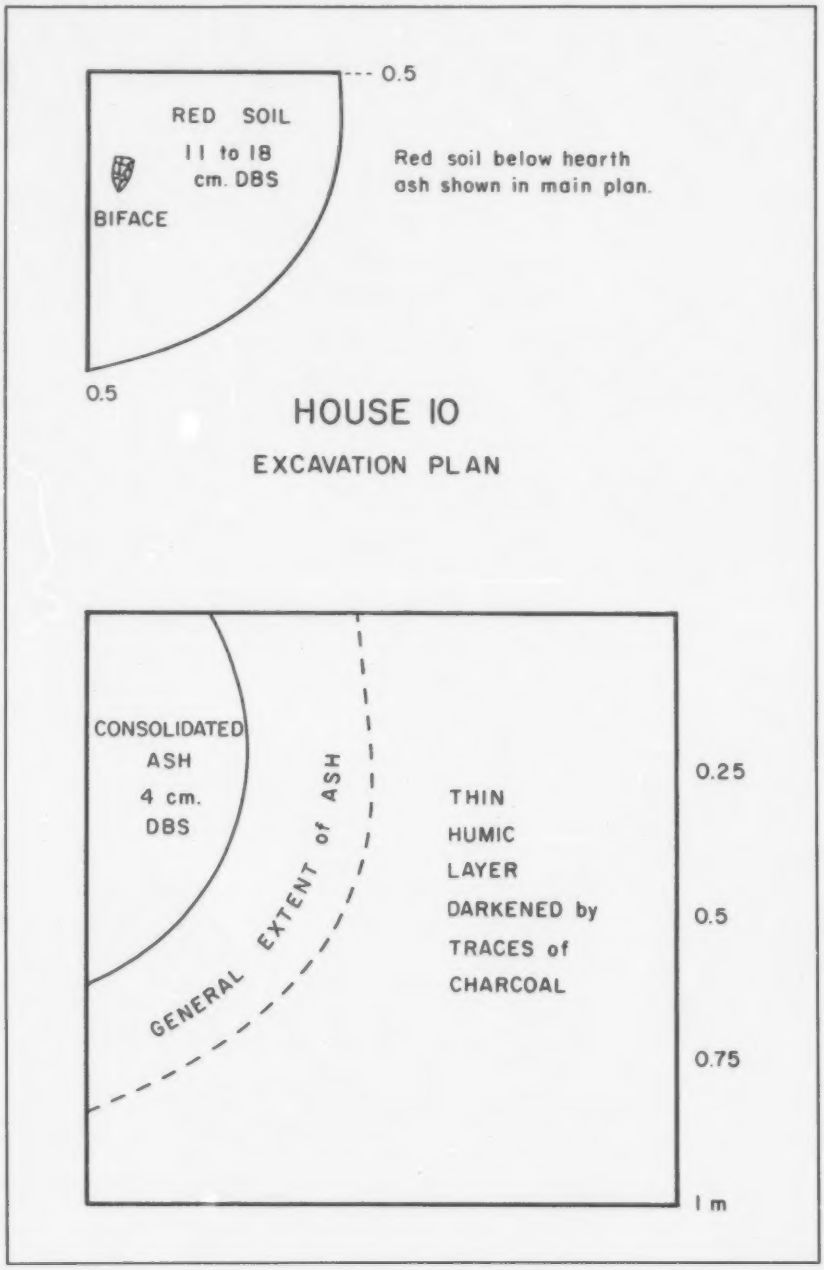


Figure 4.11. Plan of House 10 test.

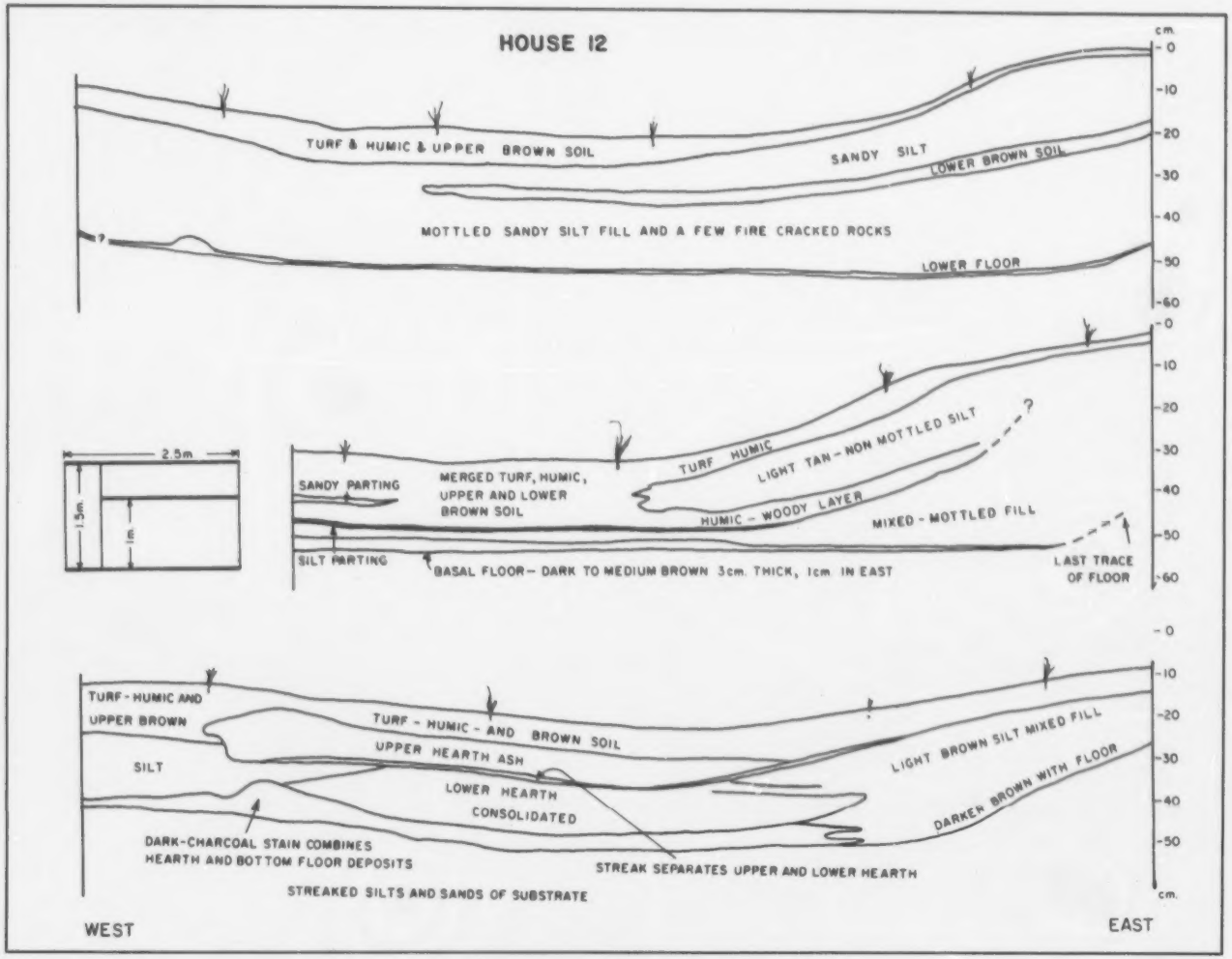

HOUSE 12
cm.
TURF & HUMIC & UPPER BROWN SOIL
SANDY SILT
LOWER BROWN SOIL
MOTTLED SANDY SILT FILL AND A FEW FIRE CRACKED ROCKS
LOWER FLOOR
2.5m
1.5m
SANDY PARTING
MERGED TURF, HUMIC, UPPER AND LOWER BROWN SOIL
TURF HUMIC
LIGHT TAN - NON MOTTLED SILT
HUMIC - WOODY LAYER
MIXED - MOTTLED FILL
SILT PARTING
BASAL FLOOR - DARK TO MEDIUM BROWN 3cm. THICK, 1cm. IN EAST
LAST TRACE OF FLOOR
TURF - HUMIC AND UPPER BROWN SILT
TURF - HUMIC - AND BROWN SOIL
UPPER HEARTH ASH
LOWER HEARTH CONSOLIDATED
LIGHT BROWN SILT MIXED FILL
DARKEN BROWN WITH FLOOR
DARK-CHARCOAL STAIN COMBINES HEARTH AND BOTTOM FLOOR DEPOSITS
STREAK SEPARATES UPPER AND LOWER HEARTH
STREAKED SILTS AND SANDS OF SUBSTRATE
WEST
EAST

Figure 4.12. Three sections of the House 12 fill.

Figure 4.13. North wall of House 12 test (upper profile in Fig. 4.12).

Figure 4.14. Medial section of House 12 test (middle profile in Fig. 4.12).

Figure 4.15. South wall of House 12 test with semiconsolidated hearth deposit (camera facing south, reverse of profile in Fig. 4.12).

A layer identified as brown soil or lower brown soil (in places the upper and lower are distinct layers) becomes, with depth more compact and intermixed with silt or sand. This, in turn, bottoms out on a relatively pure, compact fine sand (or silt) layer that is suggestive, from its density, of a floor though the lack of artifacts does not support any identification as a floor. The silty sand is only 2 cm thick above a distinct, thin organic stained floor (much thicker near the north wall filling a widening gap between the level floor and rising base of the brown soil). On the north side of the structure the lower brown soil contained several artifacts, suggesting that it may incorporate a living surface well above the lowest floor.

The area of the House 12 excavation is only 1.5 by 2.5 metres. The east edge of the excavation (right edge as figured) extended to the crest of the berm or maximum limit of the depression. It is seen from the sections that this also is approximately where the floor ends. The muted north limit of the depression lies about a metre beyond the limit of excavation, but rising (sloping), thickening fill layers along that edge of the excavation display the characteristics of fill along the edge of a pit. The west limit of the depression (left of profile) also is half to one metre beyond the excavation, the southern limit of the depression was not defined. Further excavation is required to fully define the floor limits, but, on the basis of the size of the depression and excavation data the house floor appears to have been 2.75-3 metres in extent and probably more or less square in shape. Complete excavation of the floor probably would show that the hearth is off centre, closer to the west end and south wall (House 1 and 3 hearths also were slightly displaced towards the west end.).

4.7. HOUSE 4, A PARTIALLY INFILLED STRUCTURE

This house was bisected by a trench that essentially extended from one end to the other. Complexities relating to an uneven floor, multiple hearths, and construction features only partially revealed at the west end of the trench make it impossible to interpret the structure on the basis of the amount of excavation done there. House 4 presents several features differentiating it from the other house pits. Among these are the recovery of cupels used in the fire assaying process. The only other location at Fort Reliance to produce artifactual evidence of assaying is the hearth of House 3. This was the only house investigated that had multiple hearths, representing at least two stages of periods of occupation. Another atypical aspect is the relatively large range of species represented by the faunal remains recovered there. House 4 also is the only feature to yield abundant imported European ceramics, with the partial exception of the fill above the floor of House 12. The latter is proximal to House 4 and the two may have been located within the same discard zone. The edges of the house depression are poorly defined. The interior is about 3 metres wide and the distance to the top of the berms at the sides about 5 metres (see profile for interior length). Atop the berm on the north side there is a large flat stone 48 cm long and 19 cm thick similar to stone slabs seen in one corner of House 7.

The profile in Figure 4.16 shows the south wall of the narrow excavation trench that nearly

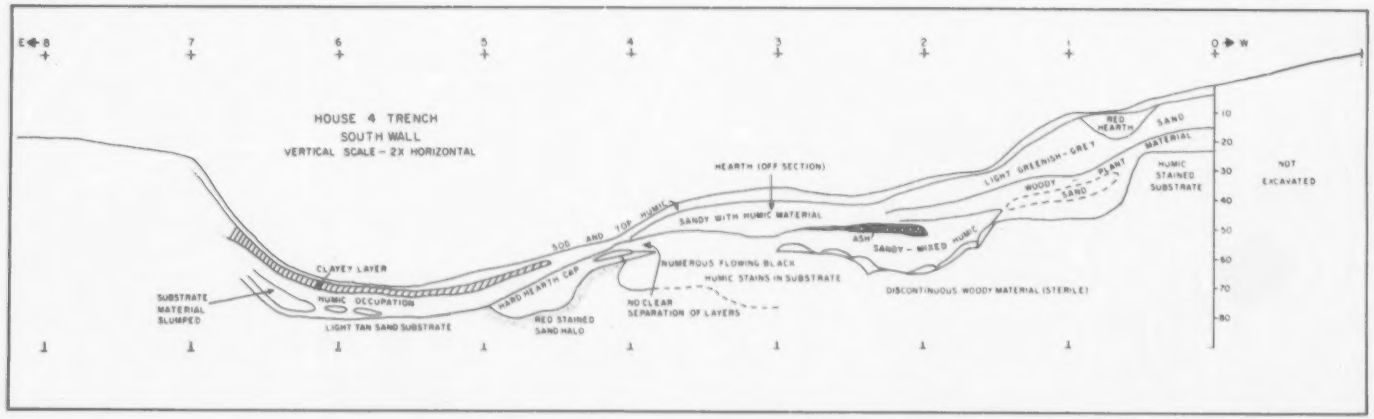


Figure 4.16. Stratigraphy of the House 4 trench. A partially filled-in structure is present. Edges of the original structure may be seen in the surface topography at the left end of the section and in the abrupt drop to the buried floor at the right end.

bisected the structure. East and west end walls are not clearly defined in the profile due to limits of the length of the trench. Three discrete hearth deposits--one of them very extensive are present within this excavation alone, and complete excavation might uncover further hearths. The location was reoccupied at least once after the west end of the structure apparently had been filled in. Artifacts were present from the turf downward into what appear to be deposits formed on the floor or by the main occupation, and these include both indigenous-type and European items. The west end of the trench exposed a vertical feature cut into the substrate and subsequently filled which appears to be the edge of a house pit, sunken entry or other structural feature. These complexities may not be understood until a greater portion of House 4 and surrounding deposits are excavated.

4.8. SEMISUBTERRANEAN HOUSES WITH ENTRY PASSAGES

The housepits, as they appear today, were described in the preceding chapter. This section describes their excavation and stratigraphy, details structural information, and presents a synthetic reconstruction of the semisubterranean house.

4.8.1. Excavation and Stratigraphy

4.8.1.2. *House 1*

Main Room. Two contiguous 1.3 and 1.25 m square sections were excavated in the south half of the main room in 1983 and 1991. Figures 4.17 and 4.18 show the north wall of the 1983-1991 double test pit in House 1. This 2.55--m-long excavation unit edge lay along the centreline of the room. The other edges lay slightly inside the limits of the floor. No posts or post holes were uncovered by these sections which are of sufficient extent to reveal at least some internal uprights that might have supported the roof, exclusive of any posts along the very wall or in the corner.

Stratigraphically, the two sections are disjunct. The reason for this appears to be a pit or disturbance affecting adjoining edges along the profiled wall. House 1 contained evidence of later camping in the housepit: iron wire, wire nails, a boot part, etc. in the fill above the floor, and the disturbance may relate to that event. This fill also includes soil from an apparent animal burrow in the southwest corner of the house. Hearth deposits are transected by the right-side of the profile. These hearth deposits consist of a complex of hearth and soil layers (variously mixed and separated lenses of ash, red sand, fire-cracked rock, and charcoal-stained soil) that rise as a broad mound above the level of the floor. This is the original house hearth, but it is not clear that the mixed hearth layers do not also include a later hearth. The hearth position is slightly forward of the centre of the room.

At the front of the house, the floor is represented by a distinct layer of decomposed humic material and matted vegetation derived from material used to cover the living floor. Near the

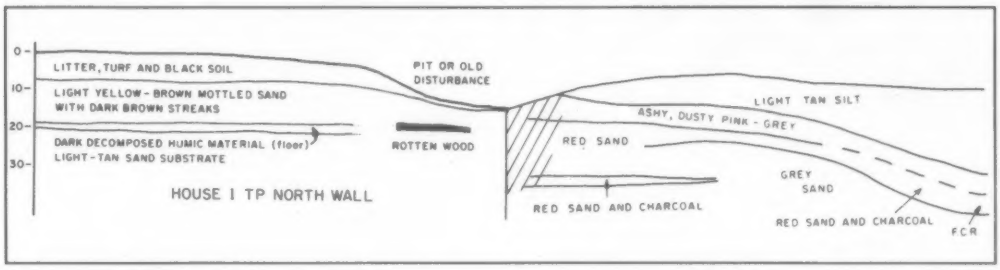


Figure. 4.17. Stratigraphic profile of the north wall of the House 1 test excavation.

Figure 4.18. Stratigraphy at the front of House 1 (left portion of Fig. 4.17 profile).

hearth, though, the floor was uneven and difficult to follow. In places it was marked by strips of rotten wood oriented parallel with the axis of the house. Numerous items were found near the left front corner, especially beads and fish bones, while farther into the house, at the hearth, artifacts were less numerous. Objects found on the floor of the main room are relatively small compared to the pot, large cobbles and large bones found in the entry.

The entrance trench was completely excavated, as is described in section 4.8.2.4. Questions arose in interpreting the stratigraphy and occurrence of artifacts there. The following discussion,

though specific to House 1 is pertinent to interpreting other fills. Artifacts and the rare refuse bone were found at various depths in the trench fill as well as on the floor, and fire-cracked rock was especially common. Several modes of origin account for the location of these objects.

1. Some were found On the entry floor and are contemporary with the entry and house. It was relatively easy to identify the artifacts from this context.

2. Some may be objects placed on the roof, leaned against the outside wall or placed on any ledge within the entry. Such a ledge could be formed easily from part of the original ground surface enclosed within the walls. The excavated part of the entry would have been barren soil; walls were erected above the ground to extend the height of the passageway. Artifacts and other objects subsequently could have fallen into the trench as the upper part of the tunnel collapsed. Though recovered stratigraphically above the floor, they are coeval with the floor. It is not clear to which if any objects this explanation applies.

3. Some refuse and artifacts present on the site prior to construction of the house would have been incorporated within the dirt used to bank the walls and cover the roof. With abandonment and collapse, this material would partially fill the trench. Their stratigraphically higher position notwithstanding, items from this context actually predate the structure in a case of reversed stratigraphy. Testing at the back wall of House 1 showed that there had been historic age occupation there responsible for depositing fire-cracked rock and European artifacts before the house pit was excavated. Much of the fire-cracked rock found in the fill above the tunnel floor level may be from such disturbed antecedent occupations.

4. Housepit 1 was reoccupied, probably early during the present century. The trench, without any roof, again may have been used for access to whatever shelter was placed in the depression. One "bag lot" of large wire nails, found at a shallow depth in the trench fill, was left there by these later visitors to the site. A Remington shotgun cartridge case from the turf could have been dropped by any casual later visitor.

Other elements of House 1 stratigraphy encountered in the northeast corner and along the back wall are described in section 4.8.2.2.

4.8.1.2. Houses 2 and 3

A large tree root confined the House 2 excavation to the entry trench. The results are noted later in the discussion of entry passages. The House 2 entry is the only context in which beads were found in unit clusters: 4 small black and 4 small white beads in an apparent string in one case and 17 white beads (11 small, 4 larger) lying in a tight row in another case.

Three test squares were excavated in the House 3 depression: one near each south corner and one near the centre. Figure 4.19 shows the north wall of pit located in the south rear corner.

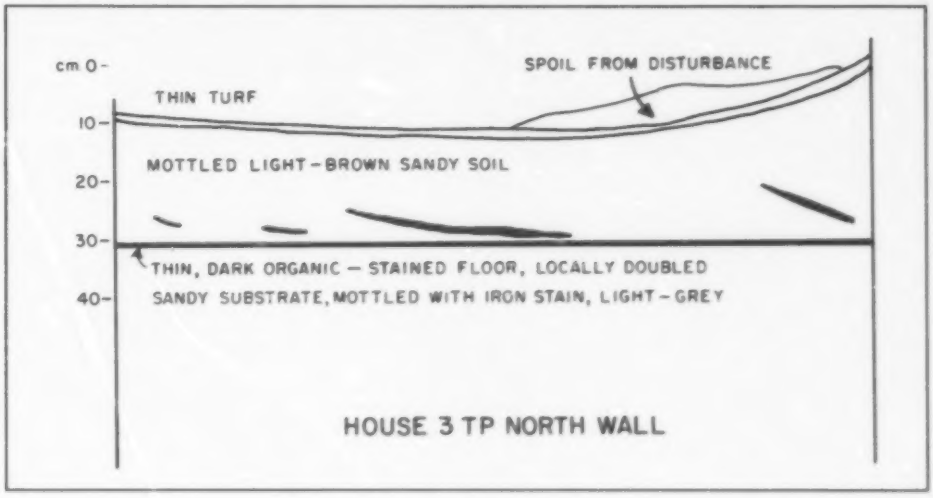


Figure 4.19. Stratigraphy of the north wall of House 3 SE corner Test Pit.

The rear wall is located to the right of the figure (east). The depth of fill over the floor increases towards the wall, though in this house it is thick everywhere. Here there also is spoil from a disturbance, probably from pothunters, overlying buried turf. Figure 4.20 shows bark sheets, probably from aspen, uncovered in this section. Traces of bark sheeting also were encountered in the other corner excavation. The bark sheets are consistently 50 cm in one dimension and measure (a) 49 cm across grain by 74 cm; (b) 114+cm (end missing) across grain by 50 cm., and (c) ? cm (runs into wall) across grain by 50 cm. Bark in the other, SW corner section measured at least 47 by 43 cm and 68 by 52 cm. The latter set appears to extend beyond the area excavated. Below the bark was rotten wood, floor traces, and a small subfloor pit 38 cm in diameter. The pit contained rotten wood. A cobble partially uncovered on the floor in the southeast section is 23 cm long. It was left in place and was not examined for traces of use.

The top of the hearth deposit at House 3 was within and just under the turf, a situation possibly indicating that the area around the smokehole was only lightly banked with soil, or that this insulation had slid off the centre of the roof towards the sides before the houses collapsed. However, as was the case with House 1, the pit may have been reused by campers. The house depression would have provided some degree of shelter. Evidence for this rests on the fact that wire nails, postdating the Reliance period, were recovered from the hearth excavation, as also was part of a crucible probably used in fire assaying. The pit at House 3 is heavily overgrown with grass which forms a very tough sod, and in this respect it differs from the other housepits. The underlying deposits are moist and there are lenses of clay at the base of the floor. The clay probably impedes drainage, accounting for the increased moisture and difference in vegetation.

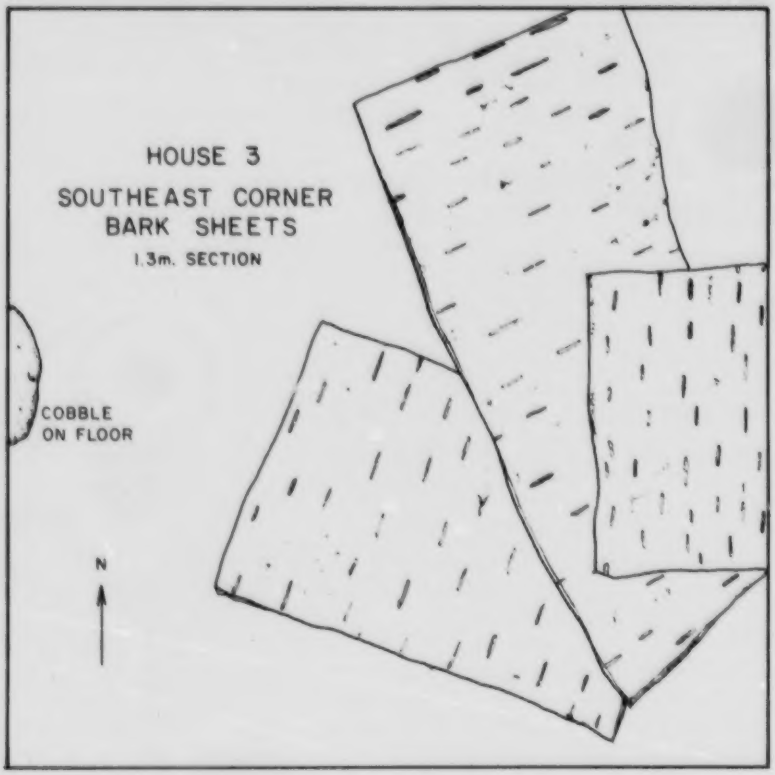


Figure 4.20. Poplar (aspen?) bark sheets uncovered in fill a short distance above the floor in the south rear corner of House 3.

4.8.2. *Structural Information and Features*

Structural information recovered from the excavations at semisubterranean Houses 1, 2 and 3 is summarized below.

4.8.2.1. *Floors*

Distinct floor layers are present in all house pits. Usually the floor consists of an artifact-bearing, thin, organically-stained zone. Locally however the floor looses this distinctiveness as a stained layer but can be followed by the occurrence of artifacts and by the succession of distinct fill and substrate layers. The entry trenches have their own organic litter layers plank floors, differing somewhat from the floor in the main room.

F2

4.7.2.2. *Beams, Posts and Other Structural Members*

The rotted stub of a post was found where the House 2 entry joins the house chamber. The entry of House 1 also was excavated, but no vertical wood was found in a comparable position. With the exception of the 1991 work at the back of House 1, excavations were not suitably placed to recover corner posts. It suffices to say that if posts had been placed inward from the corners or in pairs lateral to the centre-line, their traces should have been picked up by the 1983 test pits in Houses 1 and 3 (and also House 12). No such posts were found. This situation complements the evidence for posts placed in the very corners as is documented in the one suitably placed corner excavation, made in 1991. That test cut provided valuable information by uncovering a sturdy corner post, set almost against the original house pit excavation. It also uncovered a single horizontal pole, probably part of the rear wall (Fig. 4.21). For the record, details are given below.

A rear corner was selected for a 60 by 90 cm oblique section. It would have been preferable to excavate the SW front corner so that the excavation would be contiguous with other test units, but that corner was the site of a large animal den and thus presented the prospect of providing disturbed or unsatisfactory data. In retrospect, the denizen may have been attracted to this spot by easy access provided through the decay of a corner post.

Fire-cracked rock and two thin nearly horizontal layers were found half way down between the top of the berm and the house floor. The short upper lens contained bark and wood matter, while a continuous lower layer with which it merged (68 cm below reference point on berm) contained more vegetal matter, soil from a hearth and altered pink, and fire-cracked rock. These layers are interpreted as part of the original or antecedent surface subsequently buried under the berm when the housepit was dug. Below that there was, in one wall of the excavation, brown soil and yellow-brown soil, which is the natural soil sequence of the site. On the other side there were various layers, some with charcoal and red soil, which appear to be soils modified by occupation that had slumped into the housepit. At 76 cm depth (from top of berm) the brown soil contained tabular hide scraper fragments.

A post was uncovered in the corner, and through examining the stratigraphic section it was possible to recognize the back wall or edge of the original housepit excavation. At 122 cm depth a small horizontal log was found parallel to the back wall and abutting the post. This log extended beyond the area excavated. Horizontal bark sheets found at 129 cm depth define the floor which otherwise had no stain or distribution of artifacts. The post was placed precisely in the corner, its edge 7 cm out from the face of the original housepit excavation. It was of substantial proportions, 17.2 cm in diameter.

From the exposed profile it appeared that the original house pit excavation was 49 or 50 cm deep. However interior-exterior elevation differences are somewhat greater. The difference between the elevation of the ground in back of the house and the buried floor inside the house, is 67 cm according to a set of elevations taken in 1991, and 71 cm according to an independent set of measurements taken on slightly different points in 1983. This figure should represent the depth to which the pit was dug during construction plus any soil that accumulated on the site after the house was built. The data for House 1 are conservative compared with House 2 and 3 where the difference between house floor and ground surface is in the order of 76 to 107 cm depending on the point of reference on undulating or sloping terrain.

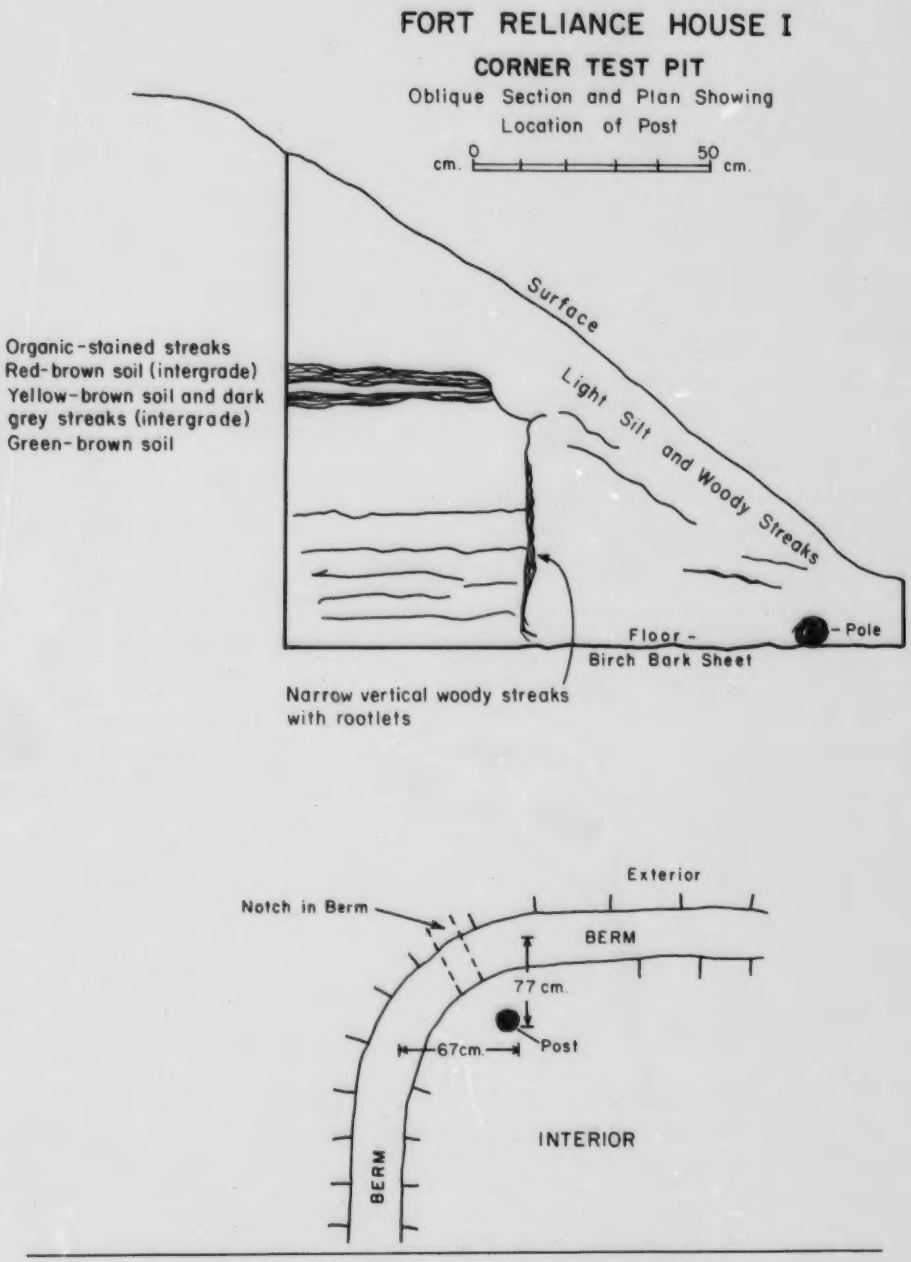


Figure 4.21. Stratigraphic profile and features of the northeast rear corner of House 1.

We also did not find any trace of large timbers which might have been ridge poles and roof beams, displaced or otherwise. Given the evidence (below) for a heavy turf-covered roof, supporting beams would have been necessary and therefore I suspect that when they fell into ruin the structures were robbed of this component. Possibly, decay has been very rapid. In the case of the rear corner post found in House 1, smaller posts at the House 2 entry, and the so-called flag pole, only buried portions have survived, and then in highly decayed condition.

Back Wall. To further search for evidence of posts required to support any ridge poles, and having found a corner post positioned close to the wall (suggesting that other posts might be near the back wall), a section was excavated along the back wall of House 1. This section consists of a narrow strip that removed the fill along a substantial extent of the back wall down to the floor, and also cut into the berm sufficiently to exposed a small portion of the top of the original ground surface at the edge of the housepit. Inasmuch as the corner post (above) was found to be so substantial, I suspected that we were faced with a mode of construction requiring only one intermediate post between corners, or none at all. No evidence of either single or paired posts was recovered.

The soils encountered were similar to those found in the corner test pit. A buried organic-rich soil was found along essentially the whole length of the section, representing the surface prior to excavation of the housepit and construction of House 1. Fire-cracked rock occurred along the length of this exposure and at one location, consolidated hearth ash was found in the same layer. A European ceramic sherd is associated with the hearth material. Other imported artifacts and a number of stone hide scraping slabs were found on the buried surface. The edge of the housepit floor was found well inside the existing depression, about 60 cm inward from the crest of the berm, covered by the toe of material slumped from the wall.

Excavation of the corner and backwall sections was very informative and helped establish the following structural details for House 1:

- There was a post in the corner.
- The post was of substantial size, which implies that it supported a heavy load.
- Otherwise, there were no posts positioned along the back wall, and these observations lead to the preliminary conclusion that the construction format was one that did not utilize either single or double ridge poles.
- The post was set against the walls, not out into the room, thus excluding the likelihood of four-centre-post cribbed vault construction as is found in some Eskimo houses, though a form of cribbed construction is possible with corner posts alone.
- The post had not been removed, e.g., robbed, when the house fell into ruin.
- Nearly sterile floor conditions prevailed in the corner. No artifacts other than the bark sheets were found there.
- The floor, though weakly marked, is no less deep in the corner than elsewhere in the room.
- Birchbark or other bark sheets were used in the house for an undetermined purpose.
- There was occupation on the surface prior to construction of House 1, some traces of which now are buried under the berm. This occupation was at least in part precontact, probably dating to the first years of Fort Reliance.

- The corner test pit made it possible to measure the original depth of the house pit.
- The size of the house pit has not been reduced by slumping.
- The disposition of the berm and slumped wall material almost entirely outside the floor limits shows that, unlike some northwest Alaskan Eskimo and Athapaskan houses the walls were not inclined inward.
- There is one additional supposition, significant to interpreting the construction. A massive block of sediment, averaging about 50 cm thick, was dug out to make the house depression, yet the amount which was returned to cover the roof, and which now covers the floor, is only about 25 cm thick, and in some places only 16 to 18 cm thick. Nevertheless, in the construction or repair of this house it was necessary to borrow additional soil from pits at the rear and side of the house. Not only was the roof covered with soil, but to account for all the soil utilized the sides also must have been heavily banked.

4.7.2.3. *Roof and Superstructure*

Thick soil found above the house floors was derived principally from collapsed roofs that had been covered with turf for insulation. The fill in House 1, exclusive of the recent turf layer, is 19 cm thick along the house centre line and thicker near the wall. It was thinner over the slightly mounded hearth deposits. In House 3 the fill away from the hearth is 19 cm thick at its thinnest point, and generally it is considerably thicker, 30 cm or more. One reason for the fill being thinner over the hearth is that there was an opening in the roof at this location. As well, turf and soil covering the roof may have slumped away from the apex. In House 12 the lowest of several fill layers is only about 4 cm thick near the centre of the depression, but it thickens rapidly to 15-20 cm near the walls. In this case, and also in the entry passages of other houses, the fill over the floor may be largely material that has sloughed into the pit from the sides, but it is apparent that the roofs of most semisubterranean houses at Fort Reliance were covered with a thick heavy layer of soil. We have noted, though, that timbers required to support such a roof were not recovered.

Five sheets of *Populus* bark (probably trembling aspen) were found in the two south-side sections of House 3, in the fill above the floor (Fig. 4.20). Two bark sheets also were found lying directly on the floor in the northeast corner of House 1. These sheets are of a consistent width, varying only from 47 to 52 cm. They do not have any sewing holes and their purpose is not apparent. A House 1 bark sheet was accompanied by an additional narrow bark strip which was found in place along one edge. Similar reinforcing strips were found sewn to the edge of birchbark sheets recovered from early historic housepits on the Koyukuk River, Alaska (A. Clark 1994). According to contemporary records, bark shingles were used on the Fort Reliance trading post cabins as well. Sewn bark covers, layered with moss, dirt and turf, were common to the houses of the Koyukon and other Athapaskans and the inland Kobuk Eskimos of western Alaska.

4.7.2.4. *The Entry*

The entry trenches of Houses 1 and 2 were excavated. These may be called "tunnels" after the roofed-over tunnel entry recorded for Inupiat Eskimo houses in western Alaska. This type

entry was used with barriers or baffles to impede the rush of cold winter air into the house. Nevertheless, compared with Western Arctic Eskimo houses, the passages were more like summer entries rather than the cold trap-equipped passages that dropped below floor level and entered the house from beneath the floor.

For House 2 the floor of the entry was at the same level as the house floor, or 10 cm lower after removal of a thick but nearly sterile fill of wood shavings. The inner part of the entry was floored with tightly fitted, narrow, split-pole planks (Fig. 4.22). The bases of two posts were found at the inner end of the entry (one a triple post made up of three timbers). It is not clear whether these were to support the entry roof or the house superstructure. Near the outer end of this entry there were four small stone slabs, 10 to 30 cm long.

The trench floor at House 1 was deeper than the main room, but since it was not deep enough to be a true cold trap the reason for this is not clear. At the edge of the main room, or a short distance outside, the trench steps down 20 cm below room level. It then continues to slope gradually to the end of the entry where it is 40 cm below house floor level.

Figure 4.22. Flooring in the House 2 entryway. The excavation was constrained to an angled outline at the top right by a large spruce root that we did not want to cut.

The length of this trench is about 2.8 m, but the last 44 cm slopes upward. The slope at the end probably was to facilitate descending into the tunnel, and there may have been steps here once. The tunnel roof would have extended beyond the end of the trench, and should have been raised like a shed to allow easy entry. Floor traces indicate a tunnel width of about 83 cm at the edge of the main room and 94-99 cm towards the outer end of the trench. The berm around the trench is narrow and low and is especially slight at the front. This is to be expected since if the passage was thermally isolated from the rest of the house it would not have been necessary to bank it for insulation. There was, however, a thick fill above the floor, indicating that at least a moderate amount of silt now slumped into the trench originally had banked the walls and roof.

Other than for showing its form (depth, size, slope, etc.) excavation of the trench yielded little information about the entry. Near the inner end of the tunnel at the 20 cm step, there was a large smooth cobble measuring 25 x 22 x 12 cm. In the fill, towards the outer end, there was another smooth cobble that measured 30 x 23 x 13 cm (Fig. 4.23). These large cobbles or small boulders may not be entry furnishings, but their presence at House 1 is not to be taken casually. They had to have been carried up the steep river bank to serve some specific purpose.

Wooden cross pieces were found just within the main room and where the entry drops 20 cm. There also were thin traces of rotten wood that ran lengthwise which possibly are from the roof.

Figure 4.23. Two large cobbles found in the entryway of House 1.

Three posts or wall liners were found closely spaced (spanning a width of 31 cm) at the edge of the trench close to its outer end, on one side only. They begin about 25-28 cm in from the point where the end of the trench slopes upward. These apparent posts were located at the very edge of the floor and their base extended only slightly below floor level. No posts were found on the opposite side of the trench.

There was thick mat of spruce needles and other organic matter on the floor over the length of the entry excepting its inner end. Although this matrix seemed to be an ideal context within which small artifacts might be lost, artifact recovery from the floor was low. Spruce boughs are a traditional floor covering. When they dry out and are removed, needles that fall off remain on the floor. The reason why traces of this covering would be much stronger in the entry than in the main room requires an explanation. Dogs may have been kept in the entry, judging from the recovery of presumed dog faeces there and in the outer part of the main room. Possibly spruce boughs were placed as bedding for dogs over the cold ground in the entry, an amenity that might have been offered especially valued hunting dogs during very cold weather.

Also found on the tunnel floor, underlain and surrounded by fire-cracked rock, was an upright enamelware pot which may be a "dog pot." Alternatively, the pot may have had another function, possibly relating to the sweat bath. It contained nothing (other than the usual sandy fill). Fire-cracked rock occurred on the tunnel floor, as well as in the fill, indicating that for whatever reason the occupants of House 1 were still in the business of producing fire-cracked rock. The entry might have been used secondarily as a sweat bath chamber. Most tribes had a separate hut or tent for the bath, but the Atna of the copper River and some Upper Tanana had baths attached to their permanent houses. If then entry passage had been used similarly, the rocks would have been heated, probably in the hearth of the main room, and then passed into the entry chamber. The pot would have contained water for steam and washing.

4.8.2.5. *Hearths and Fire-Cracked Rock*

The hearth of House 3 was uncovered in a test pit placed especially for that purpose (Fig. 4.24). It is located slightly forward of the centre of the house, but its exact position will not be known until the corners of the house are precisely delimited. Hearths also were found on the floor of semisubterranean House 1 and in some other structures. These hearths are simply accumulations of ash, sand and calcined bone. They are partially consolidated or cemented. Peripheral to the hearths is a modest zone of charcoal stained soil but no chunks of charcoal are present. Oxidized or fire reddened sandy silt often is present beneath the hearth deposit. No construction or enclosure surrounds the hearth.

There are no evident cooking stones associated with the hearths, although before the introduction of metal pots, cobbles were used for stone boiling, as documented in 1851 by Campbell for the upriver neighbors of the Han (Campbell quoted by Wilson 1970:112). As well, there were no larger stones placed to absorb heat from the fire, though that practice is known in

Figure 4.24. A wall of the House 3 Hearth Test Pit. This view does not intersect the hearth that this test pit cut into, but it shows the charcoal-stained floor layer and charcoal-stained patches in the fill. This profile of mottled soil suggests disturbance and secondary use of the house pit.

western Alaska. Large cobbles were found in the houses or entries, but not near the hearths. This situation is perplexing inasmuch as elsewhere on the Fort Reliance site, off the house floors but in some cases close to the houses, fire-cracked rock (FCR) is very common and is associated with ash. There can be little doubt that this rock and ash come from hearths. Further to the subject of cooking, almost no skewer stick moulds were recognized in the fine-textured matrix of the floor (substrate deposits). Commonly, skewers would be jabbed into the ground and the end with skewered meat leaned towards the fire. Evidently, this cooking technique was little used at Fort Reliance. Cooking techniques there remain to be documented and the fire-cracked rock remains to be explained adequately. Probably, when weather permitted most cooking was done outside. Most of the fire-cracked rock may be from older deposits formed before the houses were occupied and before metal pots had replaced stone boiling in baskets. By 1868 Whymper found that some of the tribal chiefs around Fort Yukon had so many pots (among other goods named) that they were buying up and accumulating large quantities of glass beads (Whymper 1869:114). The shift away from stone boiling may have occurred not long after Campbell observed the technique. Some of the fire cracked rock could be from sweat baths, as was discussed above.

4.9. CONSTRUCTION OF THE SEMISUBTERRANEAN HOUSE

The following synthesis recreates the construction of dwellings like Houses 1, 2 and 3.

A work crew, probably including the prospective occupants of the new house, gathers at the north edge of the grounds. This likely was during a summer day when the soil was free of frost. The crew boss eyeballs dimensions for the house pit and everyone sets to work hacking a pit into the ground and especially through the roots from the spruce forest, recently felled for the cabins at Fort Reliance. Tools provided by the trader make the task easier than it would have been with wooden and bone picks and scoops. No one would have attempted to dig such a pit in heavily rooted ground in ancient times. When the pit is a little less than one metre deep the floor is levelled off, and the entry passage dug down another 40 cm. Then a stout post is erected in each corner, close to the dirt walls of the excavation. Beams are strung across these posts forming a very strong superstructure, shaped somewhat like a dome. Details of the roof were not recovered archaeologically, but there appears to have been no ridgepoles or centre posts. As construction progresses, thinner poles are wedged between the corner posts and dirt walls. These walls are extended above ground level where the poles are held in place against the posts by more, minor verticals and by dirt originally from the excavation that will serve as insulation. To finish the roof, split poles and roughly split slabs of wood are laid over the superstructure. An opening, coverable when necessary, is left above the place for the hearth. In turn, the roof is covered with bark shingles, to shed water. Then, for insulation during the cold winters the whole structure is covered with a thick layer of turf and soil. A ventilator hole is left so the hearth can draw air.

Before the roof is completed, more work is done on the entry. Paired posts of lesser size are erected at the inner and outer ends. To form the roof, stringers are laid lengthwise between caps. The walls are left unfinished where they cut the soil; but the upper walls are formed by stacked horizontal poles or short vertical slabs held in place by soil and turf. For flooring, split poles are laid inside the entry. To ready the main room for occupancy, spruce boughs are passed inside to male mattress-like pads (where needed, covered with hides). At last, hide curtains or doors are hung in the entry. Finally, someone is sent borrow coals for a fire another house and the rest scurry to move in with their paraphernalia and belongings.

4.10. SUMMARY

We have described several types of features representing semisubterranean houses, log cabins, pits dug for various purposes, a large pole or so-called "Flag pole", and hearths or dumps dispersed over the site and now buried below the surface. Also noted in the discussion of stratigraphy were widely disseminated flint chips and stone artifacts which probably reflect occupation different from and probably prior to that of the semisubterranean houses and cabins. The question of who lived in the houses is not addressed in this chapter. That will be taken up later after the artifacts have been described. So will the question of fine tuning the chronology.

Nevertheless, certain preliminary conclusions are obvious: lithic artifacts are associated with Native occupants, and when found relatively deep in the soil these may precede the period when Fort Reliance was in operation. On the basis of the type of architecture, the semisubterranean houses probably were occupied by Natives, but the artifacts recovered show that they belong to the Fort Reliance trading post period. Some log cabins unequivocally belong to the trading post and were occupied by whites. Others were occupied either by miners or Natives.

CHAPTER 5: COLLECTIONS OVERVIEW

5.1. GENERAL REMARKS AND CLASSIFICATION

This chapter provides an overview of the objects collected, mainly from the excavations reported in the preceding chapter but also found exposed on the surface, an presents certain points of discussion. The complete description and analysis of collections is in Appendix I and II.

Artifacts are not only distinctive tools, accessories and fragments, but include also detritus or waste that results from the manufacture and use of implements. Because of its greater abundance relative to tools, such waste is useful for some kinds of analysis. For instance, a person is more likely to discover traces of precontact occupation through finding the chips discarded from making stone tools than by finding any of these tools. Artifacts not only are of interest in their own right, but analysis of their spatial distribution, abundance, and consideration of the categories represented (for instance, imports compared to locally manufactured items) and any changes occurring through time or between different areas of the site can yield insights about the settlement and its inhabitants.

Faunal remains, which also are collected, provide clues to diet (and by inference, hunting), butchering practices, season of consumption or occupation, cooking techniques, ritual treatment of animal remains, dog keeping practices, and use of bones for implements; but in almost all cases imperfectly or incompletely.

Fire-cracked rock also is common at Fort Reliance. Sophisticated techniques are available for determining temperatures to which rocks were heated--for stone boiling, sweat bathing, roasting--though as yet there has been little practical application of these techniques to northern archaeology. It also is possible to date heated rocks through the thermoluminescence technique, though this application would not be appropriate for late sites. None of these analyses were done for the present report, but they are possible in the future if the need arises.

Most of the artifact names used here are self explanatory. Items are grouped according to various schemes for ease of communication and to suit the objectives of the present investigation. The first order of organization separates Native-type or Indian artifacts, most of which were produced locally, and manufactured objects of the white culture, most of which were imported. Native-type artifacts are not numerous, and I have grouped them by material--the simplest procedure generally employed by archaeologists. The decision not to amalgamate European and Native items, as would have been possible in a single functional analysis, stems from the focus accorded to Native artifacts as representing occupation predating historic Fort Reliance and as technological continuities of the contact period.

Fort Reliance was part of the same Alaska Commercial Company trading network that served Alaska. For European and American imports of the 19th century, primarily by this company, there already are several analyses published for Alaskan sites (cf all VanStone; Oswalt and VanStone; VanStone and Townsend references). Here too it would have been possible to use material as the primary criterion for classification, but because the larger collection is suitable for more sophisticated treatment, I have used functional categories.

Within the Native-Imported artifact schema of classification two additional first order categories commonly are employed: Native or indigenous-type artifacts produced from imported materials, and copies of imported European manufactures produced in local materials. The first presents the adoption or adaptation of new materials for old uses, and incorporates elements of recycling which was of considerable importance in the North. Items in the second group--the resort of desperation and expediency--are rare or absent in the present collection. In the description of European or imported material we draw attention to recycling, usually for local production, but do so within the functional classification framework. Recycling sometimes presents a classificatory problem inasmuch as the original item may belong to one functional category, the one produced through adaptation or recycling to another category, both validly represented in a single item. Obviously any classification that carries interpretations (as well as being descriptive) is subject to logical inconsistencies. For example, do never used in the trader's stock represent the functional category of the type, or do they represent trade? And how can old objects kept as souvenirs or amulets be identified and classified correctly. The master compilation, Table AI.4, segregates a number of these items made of recycled material, and thus the artifact sequence in the table differs somewhat from the text sequence. This chapter describes the artifacts in the following order:

Artifacts of and Original to the Indigenous Native Culture
  Categories by Material (stone, bone, bark, etc.)
Imported European Manufactures
  Categories by Function (firearms, household, clothing, etc.)

5.2. ITEMS OF THE NATIVE CULTURE MANUFACTURED LOCALLY

Artifacts of this category are made from locally-available stone and bone and less often fine chert and obsidian and copper. Not all were necessarily manufactured on the site, but in contrast to the traders' imports, a local or at least a regional focus of manufacture is one of their distinguishing characteristics. Their primary characteristic, though, is that they were developed in the context of Native American cultures and are not associated with the white culture. In most cases these objects were used exclusively by Natives, even when of recent age. Whites did use some Native objects, such as winter boots, mittens and snowshoes, but these are not represented in the present collection. The implements recovered thus far at Fort Reliance are stylistically compatible with a late precontact and contact period date, but most are sufficiently generalized that they could be from within a relatively broad time range. Some, though, were recovered from

house floors, a context that gives a reasonable guarantee of historic age, while the remainder were recovered from a shallow depth again indicative of relative recency.

Some materials evidently were imported through Native trade networks. A piece of native copper also was collected at the site (J. Hunston personal communication 1983), and 12 obsidian artifacts were recovered (4 tools, 8 flakes). Osgood (1971:71 after Schmitter 1910) records that the Han obtained copper knives from Indians on the White River where there is a natural copper source at the headwaters just inside Alaska. Possibly they also obtained unprocessed metal in the same trade. Fort Reliance obsidian specimens have not been analyzed for their source. Most of this obsidian is visually similar to Indian River or Batza Téna obsidian from western Alaska, which is the source of some obsidian recovered on the Yukon River at Eagle (author's unpublished data), but it is possible that other or additional sources provided the relatively scarce Fort Reliance material. But on the basis of visual differences in hand specimens, the Hoodoo Mountain source of the southwest Yukon, in Kluane National Park, and Mt. Edziza in northwestern British Columbia provisionally can be excluded as sources. Nevertheless, Hunston found that people located not far away at the site of Moosehide were using obsidian that originated from Mt. Edziza and Hoodoo Mountain (J. Hunston personal communication to D. Clark).

5.2.1. Stone Implements[1]

The stone implements are obvious candidates for continuity from prehistoric indigenous lithic technology; some in fact come from an early historic or Fort Reliance period of occupation while others evidently are remains discarded on the grounds sometime before Fort Reliance was established. Stone artifacts include **chert and other stone chips** derived from the manufacture of stone tools are widely distributed over the site, though not abundant. Large flakes were made into **end scrapers and other bevelled and utilized flakes (scrapers)** (Pl. 3). The 16 scrapers belong to both pre- and post-Reliance period occupations. Another type of scraper is the **tabular hide scrapers (tci-tho or chitho)** (Pl. 2). Trimmed slabs of stone for dressing hides are a well known artifact used in the Western Subarctic for processing caribou, moose and other large mammal hides. They were used up to the present day, and are common at Fort Reliance. A **bifacially flaked knife blade** (Pl. 3q), stone **spear or large arrow point** (Pl. 3f), and a **bar-shaped whetstone** (Pl. 3t) also were recovered.

5.2.2. Artifacts of Bone

These were not abundant and consist of a **bilaterally barbed arrowhead** (Pl. 1d) similar to points from interior Alaska; **awls** (Pl. 1 a-b, e) including a fine moose splint-bone awl from House 1; a **decorated tube** (Pl. 1f); an **end of bone flesher** (Pl. 1c); and a **lurehook body** (Pl. 1g). The last appears to be a coastal Eskimo implement brought in by the traders.

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[1] Detailed paragraphing is used in this chapter in order to mirror exactly the organization of Appendix I.

5.2.3. Artifacts of Bark

Birchbark and the bark of other trees, including aspen, was used by Athapaskans for construction, containers and other implements. Of the twenty bard occurrences at Fort Reliance, the only outstanding item is the small container or **snuff box** from the floor of House 3 (Pl. 11e). The ultimate origin of this item appears to be the Eskimos of the Bering Sea coast.

5.3. IMPORTED EUROPEAN MANUFACTURES

5.3.1 Firearms Complex

In Alaska, and probably also the western Yukon, the one pound powder can or flask indicates the arrival of American traders in 1869. This item does not appear to have been traded by the Hudson's Bay Company at Fort Yukon. In 1869 the Hudson's Bay Company vacated Fort Yukon (Raymond 1900) but the American company started trading there. These commercial changes undoubtedly also brought new weapons into the Yukon valley trade.

Regarding firearms used by the Han and Tanana Indians at Nuclaco in 1883, Schwatka states:

> The gun used by them is the double-barrelled shotgun, spoken of before [small calibre, takes either shot or ball], and most of the men have from one to three of these while some are provided with Henry rifles, although there are very few of these. They are poorly supplied with ammunition...(Schwatka 1900:340).

Artifacts from Fort Reliance show use of muzzle loading weapons, the Henry rifle (e.g., .44 cal. rim-fire cartridge with double pin impression), and relatively modern centre-fire rifles and shotguns. Most cartridge cases of the last group, found on the site in the sod, undoubtedly postdate Fort Reliance. The objects comprising the firearms complex include a **trigger guard** (Pl. 4o), **powder cans** (Pl. 5a-f), **musket balls and shot** (Pl. 4), a **cap can** (Pl. 4p), and **cartridge cases** (Pl. 4). These range from .44 calibre rimfire cases, an early type, to modern centre-fire rifle and shotgun cartridge cases. There also is a **mechanical or gun part** (Pl. 6e)

5.3.2. Construction Materials Complex

This material needs little explanation. Common items included are **cut nails, wire nails, screws, flat window glass** and various **construction strips and patches of sheet metal**, in most cases cut from recycled material.

5.3.3. Prospecting and Mining Complex

Prospectors and gold miners operated out of Fort Reliance, and sometimes the traders themselves prospected during the summer. Any artifacts that can be identified specifically with

the mining industry, therefore, are of especial interest. Many specialized artifacts and pieces of equipment were used in drift mining, hardrock mining and mechanized mining, but these appeared in the Yukon after Fort Reliance was abandoned. For sluicing and rocking on the gravel bars there were few specialized accessories. It is reported that some persons had simple balances or gold scales and that mercury was used to pick up fine gold. The mercury likely was brought into the country in distinctive iron flasks, though I lack details. Most sluices and rockers would have been left to decay at the mining sites, but the riffle plates would have been kept for reuse if of specialized construction. Blankets sometimes were used to assist the recovery of fine gold, but I am not aware whether any special fabric was imported for this purpose. These organic artifacts would not have survived long at Fort Reliance.

One artifact type, and tentatively a second type recovered at Fort Reliance, are the only ones exclusively associated with mining. These are the cupels from House 4 and evidently also House 3. They were used for fire assaying, especially for sulphide ores. Their presence may indicate an underlying interest in discovering the elusive "mother load." The other artifact, which also could have been used in assaying, is a probable fragment of a small crucible.

5.3.4. Tools

This group consists of tools that are standard hardware items and implements improvised locally from recycled material. These objects come from various house floors and a trash pit associated with the main building. In the first category there are **scissors** (Pl. 6s), a **file fragment** (Pl. 6p), **chisel** (Pl. 6q), and a **knife blade** (Pl. 6t). Excepting the **small scoop** (Pl. 6t) and a **wire tool (cleaning rod?)** (Pl. 7f), objects made from recycled containers and sheet metal cannot be characterized by simple labels. For them, the reader is referred to Appendix I.

5.3.5. Household and Culinary Complex

This diverse group includes both kitchen wares and food containers.
Many **metal cans/containers , recycled metal cans/containers and other recycled metal sheet** were recovered. These items belong both to the Reliance period and to later use of the site. Most unmodified food containers are late. The **ceramics (table ware)** are almost exclusively plain ironstone, painted ironstone, and ironstone with transfer printed designs. The painted ironstone features one floral-and-leaf style. A similar style, in some cases the same pattern, is found at Alaskan sites served by the Alaska Commercial Company. Most transfer print ware is blue coloured, including the willow pattern. There is no soft or flow blue. Other artifacts include a **kerosene lamp burner part** (Pl. 10o); **pail or kettle** (Pl. 14) and **pail or kettle lugs** (Pl. 6b-c); **metal plates** (Pl.7a-b) of "pie plate" format found on the surface, from post-Reliance occupation; a **metal Cup**, handle only (Pl. 6j); four **cast iron stove fragments** (Pl. 7h-i), all possibly from the same stove; and 55 sherds of **curved glass** (not illus. except Pl. 9q). The last appear to represent jars, bottles, and kerosene lamp chimneys. Because of the risk of breakage during handling and from freezing, there would have been a disincentive to importing products in jars and bottles.

5.3.6. Clothing Complex

Clothing is represented primarily by **buttons** (Pl. 12) of which six classes of buttons were recovered in small numbers. There also is a **stay** (Pl. 12g). A **boot Part** postdates Fort Reliance.

Schwatka (1900:340) reported that the Han at Nuclaco obtained clothing and food from the Alaska Commercial Company. This is a generalization on his part inasmuch as he probably was not aware of the inventory carried at Fort Reliance. But he visited trading posts below Tanana to the mouth of the Yukon and he saw what people were wearing. Photographs show that during the early 1880s Athapaskans along the Yukon River wore imported clothing during the summer, footwear excluded.

5.3.7. Personal Use Items

This category strongly represents tobacco use for which there is a **tobacco seal** (Pl. 12j) and 38 **clay pipe** sherd lots representing a single type of pipe (Pl. 12l-s). **Combs** (Pl. 12h) are represented by hard rubber fragments. A **Decorative Medallion or Seal** (recycled) remains to be specifically identified (Pl. 12i).

The small **cross** (Pl. 12k) is of especial interest. The semi-finished hand-made cross is 26 mm high and 21.5 mm wide across the arms. It is perforated near the end of each extremity. The larger perforation at the base is smoothed or finished, the other three smaller drilled or gouged holes are rough. Thin lines on the face appear to represent a Russian Orthodox cross. Although this array of scratches may be incidental, the arrangement of short top line (bar), longer middle line (bar), slanted lower line, and the direction of the last from top left to bottom right are four elements of Russian Orthodox crosses. This interpretation draws support from the fact that some staff at Fort Reliance, especially Minook whom we met in Chapter 2, were of mixed paternal Russian maternal Koyukon Athapaskan ancestry. Steamer crews also were familiar with Russian Mission, a settlement and mission on the lower Yukon. A less direct link to Russian orthodoxy was by the Atna Athapaskans of Alaska through Upper Tanana intermediaries who are known to have visited Fort Reliance or, especially, Nuclaco (cf. Grinev 1993). On at least one occasion some Atna made the trip to the post (Allen 1887 reporting communication from McQuesten). Shubin (1990: Plate 10 2, 3) illustrates two small crosses of this general type from nineteenth century Russian-Native sites in the Kurile Islands.

Beads (Pl. 13) are numerous, sensitive to temporal changes, and to some degree indicate ethnicity. A primary classification of beads sorts them by manufacturing process. Most beads in the present collection of more than 3000 are tumbled drawn beads (smoothed or partially remelted segments of canes). Spherical wound, and geometrically shaped moulded beads also are present in small numbers. In addition, a few large blue beads have moulded or pressed facets. Drawn beads can be sorted by degree of rounding and secondarily by size. Seed or very small beads are under 2 mm. Additional classes based on layering of the glass are recognized at Fort

Reliance, especially the white-lined and clear-lined cornaline d'Aleppos. A more detailed analysis of the beads is provided in Appendix II.

Seed beads, when in large numbers, and the white-lined red Cornaline d'Aleppo group are important time markers. The occurrence and spatial distribution of these and other, mainly earlier, beads at Fort Reliance suggests that occupation there spanned a critical or transitional period in changing bead use. Seed beads do not appear in most Alaskan sites until after the Russian period. These beads, and also white-lined Cornaline d'Aleppo beads appeared in the Yukon drainage with the advent of American traders.

5.3.8. Untyped Metal Artifacts

The objects figured in Plates 6d, 6h, 6i, 6l, 6m, 6q, 7d, and 10j have not been identified.

5.4. FAUNAL REMAINS

Scattered mammal bones and rare fish and bird bones were recovered. These were moderately numerous only in the fill of House 12. Bits of calcined bone were common in hearths and at large where hearth ash has been dumped. We did not find any discrete refuse dumps and probably none existed. It is likely that most refuse was dumped over the bank and subsequently has been lost to bank erosion and swept away by the river. However, the traditional practices of most Northern Athapaskan peoples require as a sign of respect that large mammal bones be placed on dry ground away from houses, work areas and trails. Those whose habitat is the water were placed in the water. This practice may be the origin of several large bones seen on the surface near the edge of the woods behind House Pit 1.

Bird bones. Bird bones are uncommon. The few recovered have not been identified according to species. None appears to be from a very large bird.

Fish bones. Fish bones were rare except for ribs found in one area of House 1. No vertebrae were recovered, nor are there burned or calcined fish bones though calcined mammal bone is abundant. Scales are limited to a small sample of fish scales from House 1.

Burning. Calcined bones are ones that have been turned into a chalky white substance through heating. "Burned" bones, which were subjected to different hearth conditions than the calcined ones, are less common and are black or brown in colour. The brown is attributed to cooking or lower heat. Usually the calcined bones have disintegrated into small rectangular fragments, but small mammal elements tend to remain intact and some of them could be identified.

Fragmentation. There is considerable fragmentation of the larger mammal bones, evidently done in order to extract marrow, bear bones partially excepted. Chopping and cut marks are

present, as well as impact fractures (from striking with a maul or the head of an axe) and spiral breaks. The fragments are relatively large and, based on additional evidence from other sites, it may be possible to distinguish between this format of bone breaking and that of fracturing to a finer degree to extract bone grease through boiling the bone chips. All classes of bones are affected, including the mandibles, cranium, ribs, vertebrae, scapulae and certain bones of the feet as well as longbones.

Chewed bones. Schwatka (1894, 1900) observed that the Han and their numerous dogs co-resided in the summer dwellings erected along the river. Chewed bones are numerous. Probably more than half the articular end portions of bones (with cancellous tissue) is affected. Evidence of chewing consists of tooth indentation marks (or small impact cones), found on compact bone as well as on softer or thinner bone, or of gouged-out cancellous bone usually accompanied by nibbled ends and edges of breaks on the bone. Beyond this observation, however, no systematic study was made of the distribution of chewed bones to determine if they occurred only in certain contexts.

Artifacts (other than cut marks and fractures). Sawn bones are of interest because they indicate a mode of butchering more likely to be practiced by traders and miners rather than Natives. Sawn bones are not common but include the distal end of a moose tibia-fibula (727), two cuts near the ends of a compact rib producing a possible bone blank (687), the distal end of a humerus (440), and a small block of cancellous bone (631).

Bone blanks. Split metapodials, which may be either blanks or exhausted bone splinter cores (cf. Morrison 1986), are uncommon. As Morrison points out for another northern site (1986:114), the few chipped fragments recovered are difficult to distinguish from fractured metatarsals in general.

Identification by Species and Element. Because of their fragmentation, only a minor portion of the bones could be identified according to element and species. Most of the unidentified pieces are from large mammals, mainly moose. There also are some unidentified fragments from small and medium sized mammals. Whole bones are uncommon and consist mainly of hare bones and some moose and caribou carpals and tarsals

The preponderance of moose, caribou and hare, with a scattering of other species in the sample, is in accord with expectations (Table AI.5). The fact that moose exceeds caribou, though may indicate greater availability of moose in the Yukon at this time than was the case farther west, in Alaska, or that this was a period of caribou scarcity, or simply that the remains from the hybrid trading post, miner and Native settlement are not representative of Han subsistence. Fish and fowl are poorly represented, which is surprising considering that even if the harvest was staged from Nuclaco rather than the grounds of Fort Reliance there should have been consumption at Fort Reliance. If Athapaskan animal respect practices were followed strictly, there would be no remains on the site attributable to Native users, unless they were placed there

during periods of disuse, but excavations at numerous sites illustrate ample exceptions to the rule. Proper traditional disposal prescriptions may be a reason, coupled local scarcity of suitable habitat, why no muskrat remains were recovered despite the importance of the species in Han subsistence.

The overall complexion of this assemblage is that of one representing occupation by both Native and white components of the Yukon community. The former include both Fort Reliance period residents in 1874-1886 and earlier residents. The latter also belong primarily to the Reliance period but include as well people who came to the site later, probably soon after 1900 AD.

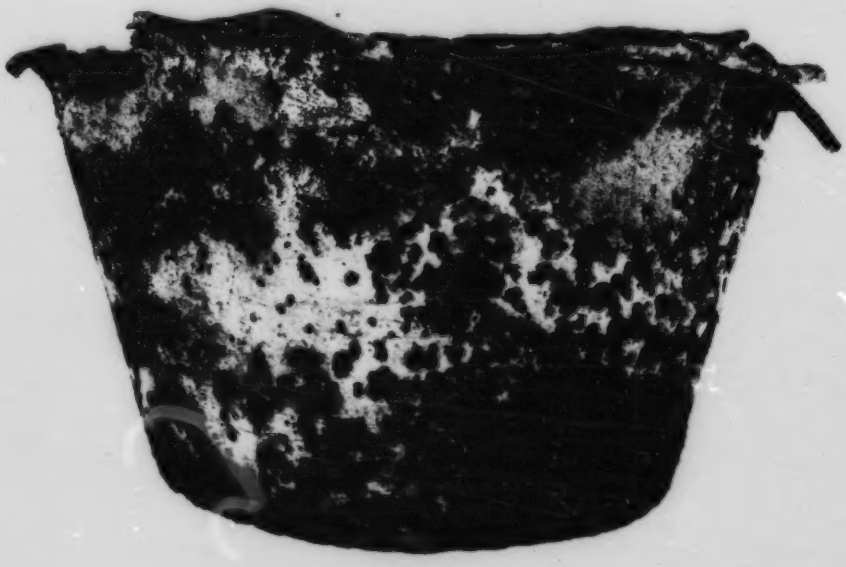

Figure 5.1. Bucket or kettle from the entryway of House Pit No. 1.

CHAPTER 6:
SITES IN THE VICINITY OF FORT RELIANCE

In this chapter we identify sites and features located in the vicinity of Fort Reliance and try to determine their relationship to the trading post and site. A record of the most recent use of the vicinity may not seem relevant to occupation more than 100 years ago, but with the passage of time the ability to distinguish between traces of recent activity and earlier archaeological indicators becomes blurred and without documentation their evaluation becomes more difficult. A significant problem is the search for additional Han semisubterranean dwellings like the post-contact ones on the Fort Reliance site, and for their antecedents. It can be noted at the outset that no such features were discovered during surveys between Dawson and the boundary undertaken by me in 1991 and earlier by Hunston (1975). Another problem is to identify where the miners who overwintered at Fort Reliance were quartered. Did they build cabins on the grounds, or did they stay some hundreds of metres or even a few kilometres distant? Although surveys in 1983 and 1991 were not directed to a consistent and complete recording of peripheral features, a number of observations, both of a negative and positive nature, were recorded. A foremost concern is to document the Han village Nuclaco, whose history relates closely to that of Fort Reliance.

Nuclaco will be discussed first. Following that, a small precontact site and features located south of Fort Reliance are described (Sections 6.3-6.7). Finally, a series of features and minor precontact sites located downriver or north of the post are reported (Section 6.9).

6.1. NUCLACO

Schwatka reported that...

> ...nearlyopposite Fort Reliance was the Indian village of Noo-klak-o or Nuclaco, numbering about one hundred and fifty people. ...The permanent number of inhabitants, according to Mr. McQuestion [sic], was about seventyfive or eighty; and therefore there must have been a great number of visitors among them at the time of our passing. [Schwatka did not stop, but was met by canoeists.] ...Noo-klak-o was a semipermanent village, but a most squalid looking affair,--somewhat resembling the Ayan town, but with a much greater preponderance of canvas. Most of the native visitors we saw were Tanana Indians.... From this point a trail leads south-westward over the mountains to a tributary of the Tanana... (Schwatka 1894:246-247).

Schwatka's official report (1885, 1900) contains a briefer narrative than the popular account quoted above, but it has a map showing Noo-klak-o directly across from Fort Reliance, without

indicating any island there. In discussing the Takon, by which term he identified the Han residents of Nuclaco, Schwatka (1900:341) stated elsewhere that the village was of considerable size, consisting of about 12 houses, with a population of 80 or 85 persons as counted by McQuesten. The houses, he said, were "not substantially built, being of logs and brush piled up, and are placed almost at the water's edge." In the same place Schwatka states that the tribe, i.e., band, numbers about 100 persons, including 35 able bodied men.

Sims (1884: July 23) stated that the Native settlement, which he does not name, was "just opposite [the trading post] on the other side of the river." He does not provide any further information on the structures at either location or their siting other than that there were 10 houses at the Native settlement, and that on one day the wind blew down several trees but the camp was clear of the woods.

Corollary information will be helpful in interpreting the remains found at Fort Reliance and for setting expectations regarding Han settlements or dwellings in the vicinity. The "Ayan" village, named Kah-tung, to which Schwatka referred above was located in Northern Tutchone territory a few miles below (north of) the site of Fort Selkirk, where a large number of people were living in brush shelters that faced the narrow beach (Schwatka 1894:224). One additional band, the Stewart River Indians, occupied the territory between the Northern Tutchone and the Klondike Indians, but we can expect there to have been a considerable degree of similarity between the three groups. Schwatka's description of the Northern Tutchone village of Kah-tung, as he states, may aptly apply to Nuclaco or any Han camp in the vicinity.

> Kah-tung, seemed to be of a semi-permanent character [a home base for excursions to the interior in the winter as he put it]; the houses or huts made of spruce brush, over the top of which there was an occasional piece of well-worn cloth or dirty canvas, but more often a moose or caribou skin. These brush houses were squalid affairs, and especially so compared with the bright intelligent features of the makers.... One could hardly stand up in these brush houses, they were built so low, and any attempt to do so was frustrated by the quantities of odoriferous salmon hanging down from the squat roofs, undergoing a process of smoking in the dense clouds that emanated from spruce-knot fires on the floor. ...The houses were generally double, facing each other, with a narrow aisle a foot or two wide between, each one containing a single family, and being about the area of a common or government A tent [each half 6 to 7 feet in each dimension]. The ridge-poles [posts?] were common to the two houses, and as both leaned forward considerably this gave them strength to resist violent winds (Schwatka 1894:224) [this is a type of double lean-to, with rounded outer corners according to Schwatka's floor plan sketch, probably similar to ones photographed about 1900 in the Copper River basin of Alaska and published in the Time-Life Old West Series volume "Alaska" on page 106.].
>
> Their present village was...evidently only of a semi-permanent character, used in the summer during the time that salmon were ascending the river...(Schwatka 1894:228-229).

Schwatka speculated that Ayan (Northern Tutchone) lifeways mitigated against their constructing log cabins.

Several kilometres below the Fortymile River, and below "Old Man" and "Old Wife" rock Schwatka came to a Han Indian village, illustrated in his several reports. The locality is near present-day Eagle, one mile above the Belle Isle trading station. This was Klat-ol-klin' or Johnny's village according to Schwatka, though by other accounts David's band lived at Eagle.

> ...saw a confused mass of brush or logs that denoted an Indian village in the distance, a supposition confirmed by the number of canoes afloat in its front and by a motley crowd of natives on the bank, well mingled with the inevitable troop of dogs.... This was the first Indian village we had encountered on the river deserving the name of permanent, and even here the logs of which the cabins, six in number [elsewhere, in the 1900 edition, stated as 7 with a population of about 100 persons], were built, seemed to be mere poles, and by no means as substantially built as it might have been with the material at hand. It was perched up on a high flat bank on the western side of the river, the gable ends of the houses fronting the stream, and all of them very close together, there being only one or two places wide enough for a path to allow the inmates to pass. The fronts of the houses are nearly on the same line, and this row is so close to the scarp of the bank that the "street" in front is a very narrow path. ...This street may have been much wider in times of yore--for it seemed to be quite an old village--and the encroachments of the eroding river...mayhave reduced it to its present narrowness. If so, it will not be long before the present village must be abandoned or set back some distance. ...The roofs are of skins battened down by spruce poles... A fire is built on the dirt-floor, in the center of the habitation, and the smoke left to get out the best way it can. ...the dense mass of it [smoke]...retained under the skins of the roof...is utilized for smoking the salmon which are hung in this space [salmon drying racks on the beach also are described] (Schwatka 1894:251-256).

Schwatka passed one more Han village, of the Tadoosh or Charley's Indians, consisting of five or six houses and 40 to 50 persons "...all built after the general plan of all the native houses in this portion of the river, of sticks and brush; and with just enough room to accommodate the various members of the family, including the dogs, which are by no means few in number."

Two areas likely for the siting of Nuclaco were examined in 1991. These were an island across from Fort Reliance (becoming two islands during high water) and, second, the west bank of the Yukon River adjacent to the island. Of these, the island is the most probable location of the site. A party floating down the main channel might have missed the island and assumed that the river was confined to a single channel. Schwatka probably was attuned to the subtle signs for recognizing islands, secondary channels and sloughs, inasmuch as by now he had had several days experience charting the Yukon from his raft, and thus it is not clear why his mapping missed this feature. One possibility is that channels have changed since 1883, but the islands are not new terrain in the short-term time scale. Due to a heavy forest and shrub root mat it was impractical to dig test pits on the islands in 1991. However, if any dwelling depressions, structure outlines and feature pits such as are seen at Fort Reliance were present, they should have been spotted through the surface reconnaissance. Henry Henry of Dawson City told me that he had heard reports of a settlement of the island. Both halves of it are forested with old spruce or mixed spruce and balsam poplar back from the brushy banks. The relatively flat island is not as high as the terrain at Fort Reliance, though the ground does rise above nominal high water level. On

the southern part of the island, the forest is relatively open, but not completely so. On the northern part of the island, the woods are brushier and less extensive. In the latter area there is only the uncommon, small cut tree stump. On the southern part, though, there is extensive old tree cutting, mostly of small trees cut close to the ground. This situation does not necessarily indicate that there were camps within the grove inasmuch as the trees could have been cut for temporary structures erected at the shore, which is the probable location of any camp or settlement judging from Schwatka's descriptions. Nor, considering the rapidity of tree growth in this area, is the cutting necessarily earlier than the present century. No surface or ground features or scattered refuse indicative of occupation were observed, nor were any graves seen on the island. It may be pertinent to the search for features that on August 4, 1884, Sims (1884) noted that most of the Indians were off in the woods from their camp making fish caches, but unless these were ground caches no trace of them likely would be visible today.

The top of the west bank of the Yukon River was walked for a distance of somewhat more than one kilometre, from an area upriver where the bank is too steep for settlement to an area opposite and slightly below Fort Reliance. This area is not ideal for a site because the ground is wet from drainage seeping out of the bank from the low benchland behind. As well, the bank is sufficiently low that trees at the outer edge are sheared and toppled by ice shove. The thick mat of vegetation there made testing impossible. Nothing of historical or archaeological interest was seen at the surface. Cut trees are rare here.

These surveys cannot be considered as definitive inasmuch as a settlement of light structures might leave no surface traces. It can definitely be said, though, that there are no cache pits and no depressed dwelling floors and no positive surface traces of Nuclaco across from Fort Reliance. We may note, though, that in his descriptions (above) of Han and Ayan (Northern Tutchone) villages, brush shelters and cabin-like structures Schwatka cites no instances of depressed floors and entry trenches. Moreover, Nuclaco was at the edge of the shore, possibly on banks flooded each year necessitating annual rebuilding of the shelters.

We will return to the topic of Han houses and the structures at Fort Reliance and Nuclaco in Chapter 7. On the question of relocating Nuclaco there are three complementary actions to be taken. The first is for ethnohistoric and historic research, including the question of river erosion, as might be studied from old river navigation charts. The second is to undertake the laborious cutting of test pits on the island in search of settlement traces. The third is to survey the area with a sensitive metal detector. From the last one would anticipate detecting a scatter of smaller metal pieces discarded during the process of recycling cans and other metal. However small metal objects could go undetected under a blanket of flood silt. The shore is the most promising area for any former occupation and any survey for metal should be extended to the exposed shores and cobble bars along the east side of the islands. Most metal discarded there or eroded from the banks of the "lost"settlement likely would remain behind, caught between the stones.

6.2. TRACTOR TRAIL

Topographic maps (Dawson 116 B/3) show a number of "winter roads" extending towards the site of Fort Reliance. These are tractor trails and are now overgrown so they do not offer a practical means of access, except possibly by snow machine. One trail reaches the bank of the Yukon River at site LaVk-15 (below) immediately south of the site from which it is separated by a gully notch (the end of this trail is not shown on the topographic map cited). It is fortunate that this trail had not been placed on the north side of the gully where the turning of tractor treads and, foreseeably, blading to fill the house pits would have done major irreparable damage to the site.

6.3. FEATURES ON THE SOUTH BENCH SEGMENT

6.3.1 Grave

Prehistoric site LaVk-15 and a number of surface features are found along the bank across the gully notch south of Fort Reliance, where the winter road noted above ends. The south terrace segment is of approximately the same elevation as the Fort Reliance site segment, sufficiently high not to suffer ice-shove damage during spring flooding. Today it is well forested with spruce. Towards the southern end of this terrace segment, several metres in from the edge of the river bank, is a small grave. The visible aspect of this grave is a rectangular picket fence enclosure too small to cover an extended adult burial. Possibly it marks the remains from a late cremation (suggested to me by M. Gates of Dawson), the preferred means of disposal among the Han prior to missionization (Osgood 1971). The pickets were made from milled boards and secured to rails with square cut nails that as yet are only slightly rusted. An age barely preceding the Klondike Gold Rush (when wire nails became common) is likely for the fence. In 1983 it was standing; in 1991 almost completely collapsed; and within a few years the pickets, now lying on the ground, will decay. Photographs taken in 1983 and in 1991 are on file at the Canadian Museum of Civilization.

6.3.2. Rectangular Pit

A rectangular pit, dug into river-bank sediments, is located at the south corner of the bench, not many metres from the grave. The outline and walls of this roughly one by two metre feature are sharp, and therefore I do not hesitate to assign it to the historic period. It would have been pointless to dig a prospect pit of geological test pit at this location inasmuch as there are extensive natural bank exposures nearby. Possibly the pit was for in-ground storage of food.

6.3.3. Archaeological Site LaVk-15

At the north corner of this bench segment, directly south across the gully notch from House

1, two chert flakes and a few pieces of fire-cracked rock were seen eroding out of an exposure in 1983. Close examination failed to reveal any additional occupation debris or a prehistoric site horizon then, but further remains were observed in the vicinity of this location in 1991. The exposure consists in part of a narrow trench excavated at the bank several decades ago for purposes unknown to me. This old cut obviated any need for testpitting.

In 1991 occupational refuse was found several metres farther south (not as far south as the grave) along the top edge of the bank. This consisted of fire-cracked rock occurring in tan silt as little as 2 cm below the surface and generally no deeper than 6 cm. Red silt underlies the fire-cracked rock. Two chert flakes also were found. Bone was limited to small fragments in trace amounts. Shovel testing showed that the fire-cracked rock was limited to a zone about 10 m along the bank edge. This small camp probably is related to the prehistoric traces found on the main Fort Reliance site though they may differ in age by decades or even a few centuries.

6.3.4. Other Features on the South Bench Segment

A heavy section of steel pipe or well casing was seen near the end of the winter road (above). A rough face is carved into a living spruce tree of the area. It was relatively recent in 1983. There is an apparent latrine constructed of poles strung between living spruce trees elsewhere in the area. Other traces of camping exist in the vicinity. Among them are two small boulders at the end of the winter road which had been carried in for some undetermined purpose.

6.4. TENT FRAME AND BASE

Adjacent to the tractor trail, where it turns southward 100 metres or more inland from the river bank, are the remains of a tent frame with lower walls and base constructed of spruce poles. There is some metal trash associated with it. This feature is several decades old, though it postdates the Klondike Gold Rush.

The south terrace area where these features are located was the former site of a wood cutting operation according to Henry Henry of Dawson City.

6.5. PITS, FIRE-CRACKED ROCK AND OCCUPATION TRACES, NORTH TERRACE

Features on the bench or terrace segment south of Fort Reliance (LaVk-15) were described above. The next several features and site (LaVk-14) are located on terrace segments north, or downriver of the Reliance site almost up to the point where hills and steep rocky outcrops reach the edge of the Yukon River. These features occupy an undulating surface underlain by sand--evidently an old stabilized dune field, now forested.

6.5.1. Fire-Cracked Rock and Refuse

A few fire-cracked cobbles and food refuse bones were seen where they had tumbled from the cut river bank near two small gully notches. No distinct occupation horizon was observed, nor were any chert flakes or implements observed. These traces are distributed for a distance of 5 m along the bank, but have been disturbed by ice shove.

6.5.2. Rectangular Pit

Also at the south corner of the dune field there is a rectangular pit, dug into river-bank sediments close to the bank. The outline of this pit is relatively sharp and therefore it probably dates to the postcontact period. As was proposed to be the case for the similar south-segment pit (6.3.2 above), this may be a cache pit. The two are similar in size and outline. Although it is situated close to the camp traces noted above, the two are not necessarily related.

6.5.3. Tested Pit Features in Forested Sand Deposits at LaVk-14

Three pit features were observed on the undulating north segment sand deposits. Two of the pits were tested. In addition many small shovel probes were made in the area, all of them archaeologically negative.

6.5.3.1. *Elongated Pit Feature*

An elongated pit located about 50 metres back from the river bank was tested both in 1983 and 1991. The seven-metre-long pit is only half a metre wide in the bottom, but it widens rapidly upward, to more than one metre at the top (much more to the centres of the berm), and could have been considerably wider prior to partial infilling through slumping from the sides. It appears to be too narrow to be a house pit. The muted outline of this pit and surrounding berm was taken to indicate that the feature was not recent. One large fragment of fire-cracked rock and nondiagnostic fragments of a burned bone artifact were recovered through a test probe made in 1983.

In 1991 a larger test pit, measuring 40 by 90 cm (incorporating the area of the 1983 shovel probe) was made. The test yielded two more fragments of fire-cracked rock from a position 10 cm above a charred wood layer, but no more bone or anything else in the nature of artifacts and cultural refuse. The following stratigraphy was recorded. The sandy silt oxidized to bright red is especially prominent. The depth to the charred wood layer varies from as little as 27 cm to more than 50 cm below the surface according to whether it is taken at the lowest, centre point in the feature or at the sides. As it is now expressed, the very base of the feature trench is only about 30 cm wide at the surface, but the horizontal layer of charred wood extends out laterally under the (slumped) walls of the pit for an undetermined distance beyond the 40-cm-wide test. The charred wood forms a nearly continuous single layer, though some pieces are in the round,

showing that they are from heavy branches, not planks.

STRATIGRAPHY IN PIT FEATURE

Litter & Turf

Light-brown to grey soil

Sandy silt oxidized red-brown

Wood charcoal ç 6 cm thick

Local traces red-brn soil c 1 cm

Light-grey powdery silt or sand (substrate)

Another, smaller test pit was dug 3 m to the side, outside the feature pit. The soils there were different from those recorded inside the feature pit and consist of (a) red-brown soil overlying (b) yellow-brown soil, and abruptly at 37 cm depth (c) a less firm light grey sand. There was no burned (reddened) layer, charcoal or cultural material here. These stratigraphic distinctions show that there are stratigraphic elements proper to the feature itself not general to the local soils, and that there is no recognizable site horizon outside the feature.

A good sample of wood charcoal from the burned layer was radiocarbon-dated to 1670±70 years (uncalibrated) before present (S-3436), which converts to 320 A.D. Obviously, then, the feature cannot be related to either recent or late precontact occupation of the area, but it contributes towards a picture of long-term use of the locality.

6.5.3.2. *Oval Pit*

This broad oval to subrectangular pit (Fig. 6.1) is located farther inland and north of the narrow pit described above. It appeared to be a plausible candidate for a house pit but the test excavation made there in 1991 did not reveal any traces of occupation or a structural floor. The base of the depression is approximately 90 cm below the top of the berm. The depression is 4.5 m long while the overall dimensions of this feature to the outer limits of the berm are approximately 5.5 by 8 m. There is, however, considerable latitude for defining such a feature on the basis of the gradual slope of the berm and depression walls. The berm is distinctive along one side, and also at one end where there is a gap suggestive of an entrance, but is weakly defined or diffuse elsewhere.

Figure 6.1. Oval pit in old forested dune deposits north of Fort Reliance.

A test pit measuring 60 by 65 cm was placed near the centre of the feature. At 27 cm depth below the interior ground surface, coincidentally at the same depth as in the narrow pit described above, some short charcoal streaks or lenses and a few red-stained streaks were found. These continued intermittently to 42 cm depth. The charcoal did not form a continuous band. Below that there is grey sand which was probed for another 20 cm. There was nothing in the fill conclusively cultural in origin. No stone of any kind was found. The interpretation of this feature remains enigmatic.

6.5.4. Camps in the North Bench Segment Area

Traces of camping exist south of these features, at the south end of the forested dunes and on a short segment (between two gully notches) between it and the Reliance site. These include, for instance, an old metal can from a camp several decades old.

6.6. TELEGRAPH LINE

Several fallen poles and a considerable length of bare wire run from a location behind the Fort Reliance site down river to the base of the bluff a short distance inland from the river. One

insulator was collected, another observed but not collected. It was suggested to me that this line ran from Dawson to the coal mine and power generation plant at Coal Creek that operated a short distance below the Fortymile River during the first decades of the present century. Possibly, though, it is part of the Dominion Telegraph line, built about 1898-1900.

6.7. SUMMARY

Remains dating to various periods occur in the vicinity of Fort Reliance. The pit features of the north terrace segment probably were dug artificially, although the evidence that they contain of human activity is so sparse that at times I doubted that. They do not appear to have been dwellings.

Clusters of fire cracked rock, sometimes accompanied by sparse bone and chert flakes, are found eroding out of the bank at various locations north (part of LaVk-14) and south (LaVk-15) of Fort Reliance. Indications of a late age of this material come from the fact that the fire-cracked rock occurs barely below the turf, and from the location of clusters at the edge of the bank. The Han often camped at the edge of the river bank where sites are being lost due to bank erosion.

The semipermanent settlement Nuclaco was not found through surface examination. There is no assurance that most traces of it have not been destroyed through erosion. Reliance-age (1874-1886) structures recognized thus far are limited to the Fort Reliance site itself.

CHAPTER 7: TRADE AND TRADERS

Aboriginal trade and the activities of trader-explorers are part of the context that led to the establishment of Fort Reliance and within which Fort Reliance operated. As well, the model for stages of white contact in the Yukon, in which Fort Reliance played a part (see Chapter 8), depends heavily on understanding the development of trade. Initially this was through Native middlemen. Later it continued directly with white traders. The present chapter then discusses trade and traders, native and European, including intertribal relationships that initially were vectors of indirect European contact.

7.1. PRECONTACT TRADE AND WHITE CONTACT

Indirect contact with Europeans through the intermediacy of other groups and subsequent direct contact, both within and outside the Han home region, figure prominently in defining and recognizing stages of local history. The founding of Fort Yukon by Murray, below Fort Reliance in 1847, and Fort Selkirk by Campbell above Fort Reliance the next year, provided the Han with enhanced opportunities for extraterritorial contact with Hudson's Bay Company traders (for a comprehensive review of European trade in Yukon see Coates 1982). Murray reported that even before these posts opened some Han had travelled widely to trade: to Pelly Banks and Frances Lake (probably between 1842 and 1847) where they sold caribou hides; to Lapierre House on the route between the Porcupine and Peel River, where 16 men went in 1847; to Russian posts on the Pacific Coast, and to the Copper River in Alaska (Grinev 1993, McClellan 1950, Murray 1910:60, 76, 82, 96). Travel as far as the Russian posts is uncertain in my estimation. What Murray reported as Han contact with Russian traders may have been indirect. At the least, the Han had sufficient knowledge of the Russians to relate many tales to Murray; some of this information had a factual basis, fuelling his obsessive interest in what the Russians were doing. Murray's concern may have been conditioned by his knowing that he had built Fort Yukon well within territory claimed by the Russians (Murray 1910:95, 101). The Robert Campbell journals do not specifically cite Han visits to Fort Selkirk during the few years it was in operation to 1852. Campbell further reported that the bands downriver had never seen a white man, except those closest to Fort Selkirk. Nevertheless, those whom he called "Ayan" can be identified as Han and at this same time he actually was using Han men as letter carriers between Fort Selkirk and Fort Yukon. Campbell related also that farther down the river some people, who evidently were Han, had been to Fort Yukon (Wilson 1970:110-112). Han visitors were in fact prominent at Fort Yukon soon after the post opened (Murray 1910:59-60; Osgood 1971-78-79).

Additionally, Fort Selkirk could have been a source of European goods to reach this group through Northern Tutchone intermediaries, though little was traded from this post during most

of its 4 or 5 years because of limited stock (Campbell 1958:93). And during his travels between Fort Selkirk and Fort Yukon in 1851 and 1852, Campbell stopped to trade at a locality I identify as the Fortymile River (Campbell 1958). Probably the items he had to trade, which are not identified, were among those obtainable at Fort Yukon (see below).

Chilkat Indians from the coast also visited Fort Selkirk, prior to destroying it in 1852. Chilkat trade down the Yukon, and that of other Tlingit groups into the southern Yukon, as recounted by Krause (1956), McClellan (1950) and others, was comprehensive, multifaceted, and extended essentially for the duration of the nineteenth century. But I have not found any detailed, period-by-period account of the goods they took into the deep interior Yukon region as the century unfolded, nor has McClellan, and I presume that this specific information is not recoverable. Extensive lists of trade goods and reports that the Chilkat packed in fabrics, pots, flour and other foodstuffs apply to a very late period when the Han were being supplied at Fort Reliance. Undoubtedly, tobacco, beads, ammunition and possibly guns were among their earlier loads.

To see what items might have been traded to the Han prior to Fort Reliance there is one list of goods at Fort Yukon about 1848, drawn together here by matching Murray's scattered references to items he traded with a list of Fort Yukon Gwich'in terms also recorded by Murray (1910:13, 91). This list has three points of relevance to the 1847-48 dateline: (a) there is reasonable likelihood that Han visiting Fort Yukon, and shortly before then Lapierre House, acquired some of the same items; (b) inasmuch as Campbell's post at Fort Selkirk was part of the same company, at a certain stage supplied from the same warehouses, any goods obtained directly or indirectly from Fort Selkirk also should be on the list; (c) but the Chilkat had more varied American, English and Russian suppliers on the Alaskan coast. Chief Trader James Anderson, in addressing Campbell's request to reestablish Fort Selkirk, stated that the Hudson's Bay Company could not compete with the Chilkats on price (Wilson 1970:127; Anderson's information probably was for the Stikeen River). Implicitly, the Company could not compete on other grounds either, i.e., the line of merchandise offered. Presumably, the Chilkats could bring in the same merchandise, and perhaps even greater variety. By most accounts, though, all trade from 1840 to about 1880 had a common emphasis on beads, ammunition and tobacco. All items on the following list probably could have been obtained through more than one source.

Traded at Fort Yukon the First Season

Axe	Gun
Beads	Gunpowder
Blanket	Knife
Tobacco box	Cloth
Comb	Tobacco
File	Vermilion
Looking glass	

Additional items from list of Fort Yukon Gwich'in terms

Awl	"Gun Worm"
Belt	Powder horn
Buttons	Kettle
Capot, cap, shirt &	Ring

other clothing	Small shot and ball	
Chisel	Fire-steel	
Dagger	Thread	Gun flint

On the occasion of the first Han visit to Fort Yukon, which was preceded by that of two bilingual (Han-Gwich'in) scouts (Murray 1910:51), Murray reported the arrival of a large party in 25 canoes, but with little to trade (1910:59-60). He observed that they had smoking pipes made of tin or sheet iron which he attributed to a Russian source (probably the tin pipes traded out of Nulato reported by Zagoskin), and were ornamented with beads.

Some information for the next decades can be gleaned from later sources, especially Frederick Whymper and William Dall who travelled to Fort Yukon in 1868, the year before American traders arrived on the river. Whymper (1869:217, 234-35) states that the Indians who traded at Fort Yukon appeared to be better provided with guns, clothing and tents than the "Russian" Indians, and he refers to the large quantity of heavy goods, hardware, guns, blankets and pots brought into Fort Yukon. But at the same time Dall expressed contempt for some of the Hudson's Bay goods: "the axe is a narrow wedge, the knives...are so worthless that even the Indians prefer to buy files and manufacture their own.... The guns are all flint-locks of the most miserable description" (Dall 1870:181). In noting the goods at Fort Yukon in 1869, Raymond (1900:39) lists primarily fabrics, clothing and notions like thread and buttons. As yet, because of the remoteness of the post, little or no food was available for trade, and even staff at Fort Yukon were not adequately supplied with such basics as flour and tea. Details of the stock traded at Fort Yukon are available in HBC archival records (Katherine Arndt personal communication Sept. 1994), but I have decided to proceed with the limited information presented here.

Dall and Whymper also did a little private trading to fulfil personal needs. They provide information on conditions along the middle Yukon shortly prior to the establishment of Fort Reliance. In 1866-67, Dall traded or saw traded many of the same types of goods that had been noted among the Russians and at Fort Yukon during the 1840s. These included:

Powder	Needles
Ball	Small "looking glasses"
Caps (gun)	Handkerchiefs
Knives	Woollen scarfs
Beads (strong, large)	Cotton drill [for tents] or calico
Flints and steels	Tobacco
To this list, Whymper adds (among many of the above items)	
Combs	Scissors

Ammunition and tobacco were staples, clay pipes being used for smoking. Tobacco also was chewed and snuffed. In addition to the items listed above, Dall and Whymper noted that people along the Yukon used vermilion (which had replaced natural red ochre pigment); that one individual had an English red flannel hunting shirt and a Hudson's Bay Company sash (at Tanana); and that dentalium and ornaments of indigenous origin were in general use. Firearms had apparently replaced the bow and arrow by the late 1860s.

It is difficult to get beyond the traders and explorers to reconstruct precontact lifeways, but Osgood was of the opinion that the Han already were distinguished traders prior to the arrival of the Hudson's Bay Company. Most of the evidence to be drawn in support of this view is probabilistic and thus no number of examples carries the absolute weight of proof. Coates (1982) stresses the thesis that when the Hudson's Bay Company entered the northern Yukon, it was intruding into established Native trading networks. Sims and Schwatka reached Nuclaco on the occasion of an intertribal gathering which included Han, people from farther up the Yukon drainage, and Upper Tanana Indians, that temporarily had doubled the local population. The salmon run evidently provided significant logistical support for the gathering, but its primary purpose undoubtedly was for trading, not fishing. The posts at Fort Selkirk, Pelly Banks and Frances Lake had long been closed and the only alternatives to patronizing itinerant Tlingit traders from the Pacific Coast were the posts down the Yukon River. For the upper Tanana River people too, Fort Reliance presented an alternative to dealing with Atna middlemen who had goods from the Russians on the Gulf of Alaska (Grinev 1993), or with lower Tanana (basically a separate tribe from the Nabesna or Upper Tanana), who got goods from both Russians, the Hudson's Bay Company and later from American traders on the middle Yukon River at Tanana. McKennan (1959) gives little notice to the possibility that prior to the establishment of trading posts on the Yukon, Nuclaco could have been a purely indigenous trading centre. Possibly the draw of furs to the Pacific Coast, to ship-based traders of various nationalities and shore-based Russian traders that had started in the last decades of the eighteenth century, was taking place in the remote interior decades before the arrival of local white traders. Indirectly, then, the Han could have been receiving European goods through Tlingit, Upper Tanana, Upper Atna, Northern Tutchone and possibly Gwich'in intermediaries from the beginning of the nineteenth century onward.

Unfortunately, too much interpretation has to be based on anecdotes. For instance, the first Han visit to Fort Yukon conveys the conflicting picture of a native band eager to trade but one not knowledgable in the prerequisites for this commerce: the trapping of valuable furs. Moreover, the Han were very ill behaved on that occasion, poorly accomplished in the etiquette of trading with whites, but accustomed to the insolence, cheating and threats of violence that sometimes characterized intertribal trade. There was a fine line between trade and raid and often intentions for one could change to the other (Slobodin 1981:522). Murray records that contrary to custom, the Han did not make noise [fire guns?] and sing when they arrived. This was attributed to poor relations between them and the local Gwich'in. One possible explanation also to be taken into account is that the Han were poorly supplied with guns and ammunition.

This was the first year Fort Yukon was in operation and the Han had had limited direct contact with whites. Thus, as yet they had few opportunities to acquire guns. In 1846 one Han paid for a gun in advance at Lapierre House, expecting to take delivery later at Fort Yukon (Lapierre's was out of stock) (Murray 1910:52)--a sophisticated technique for that period, suggestive of trading partner relationships. It is evident, though, that the Han did have access to guns prior to 1846 as Murray notes that they quibbled over the measure of gun powder,

attributing better measure to Russian traders; elsewhere he notes trading ammunition to them.

In addressing the question of indigenous Han trade, whether in precontact times or later, Osgood notes the importance of red ochre (exported), native copper (imported) and babiche (imported). Snowshoes are another possible trade item. Allen (1887:133) recorded that the Atna obtained snowshoes from tribes of the interior region. Even though Athapaskan culture norms provided a strong rationale for social interactions, visiting, the acquisition of geographical knowledge, and travel in support of trade, stable trade relationships tend to form only when one group has goods, either produced by them or obtained by them as middlemen, that others desire. The position of the Han far from the early coastal and interior trade centres also may have left them in a poor position as middlemen vis-à-vis the distribution of early historic trading posts around the outer perimeter of the greater region. Yet, there seem to have been others in even a more remote position, the Upper Tanana for instance, and early in the 19th century there were few enough European trading posts, other than in the Mackenzie Valley and on the Pacific Coast, that the Han did find a viable role as middlemen passing English goods to tribes to their west and possibly Russian goods to those to the east. Simeone (n.d.:60) suggests that such opportunities to participate in a network distributing European goods arose for the Han as soon as trading posts were established in the lower Mackenzie valley, early in the nineteenth century. Coates, though, sees the Han as mainly at the receiving end of this network (1982:55). But in fully precontact times they would have been better positioned as a link between groups of the south and those of the north, as in the native copper and obsidian trade, or between Pacific and Mackenzie drainage peoples. As regards the latter sphere of trade, it may be significant that some Peel River people, with whom the Han had close ties, lived on the Blackstone River, a tributary of the Peel, whose headwaters nearly meet those of the North Fork of the Klondike River east of Fort Reliance. Murray observed that the Peel River Indians obtained fancy beads from the Gens-du-Fou (Han) who in turn got them from Russians (Murray 1910:94) (By "fancy beads" Murray probably meant the blue facetted beads, such as those recovered in small numbers at Fort Reliance). The view that these were of Russian origin fails to find confirmation in Alaskan bead assemblages. Nevertheless, the type later was said to be Russian on the basis of the fact that it was in the warehouses of the Russian American Company when their stock was taken over by American traders, and the type is well represented in ethnographic collections from the Pacific Coast of British Columbia, which may be traced either to Russian or other traders. Murray was prone to overpublicise a perceived Russian presence in the trade field, but the observation of the Han as middlemen remains. Could this historic exchange reflect a precontact network? The Han and Gwich'in (Gens du Rat) were unhappy to see Fort Yukon established (Murray 1910:27, 41, 51); this plainly shows that they thought they had more to lose than to gain from the closer proximity of a trading post. As well, McClellan (1975b:216) suggests that the Han were unhappy that Campbell established Fort Selkirk, which gave the Northern Tutchone an advantageous position in trade or de-facto alliance with the trader. That they should be concerned suggests that Campbell was upsetting the balance of trade contacts. Evidently, heretofore the Han had been middlemen in an exchange between European traders and groups living at a greater distance from any trading post. Murray (1910:53) also noted that the Han brought an interpreter with them

when they came to trade in Gwich'in country--another indication that intertribal trade was a serious consideration.

The Han also had sufficient contact with distant tribes to be able to relate to Murray rudimentary information on the activities of Russian traders. There is a good basis for information that trickled to Murray's post (Arndt 1990), especially considering that this information likely had suffered through translation and through having passed through a chain of narrators. Historic records show that persons from Nulato did try to reach Fort Yukon but turned back, and that Russians had entered and explored the Copper River drainage on several occasions, possibly even with a small cannon (Grinev 1993) (The Russians were provided with cannon for a post at Tazlina Lake, but the post was not established and it is not clear that they actually took the cannon into the interior region. Small cannons were mounted on Russian skin boats that went part way up the Yukon from Nulato). Information on these activities, specifically mentioning the cannon, was related to Murray by the Natives. Murray asserted that the Gens-du-Fou (Han) visited the Russians on the (Pacific) coast, though he acknowledged that they also dealt through middlemen. Possibly the Han were making claims to gain a trading advantage, crediting to themselves what was done by their middlemen. The importance of this information lies less in documenting tenuous and perhaps indirect contact with the Russians than in the strong implications it has for an extensive network of communication among the indigenous peoples of interior Alaska and the western Yukon. Intertribal commerce, including trade in European goods, undoubtedly was important in this network. The Han were not unique: a member of the lower Tanana or Butte Indians, for example, visited Fort Yukon and richly informed Murray of the annual Russian trade at the mouth of the Tanana River.

Lt. Allen's (1887) contextual information on the Atna of the Copper River provides another perspective on the question of Han contact with Russian posts on the Pacific Coast. From the middle Copper River, communication could have continued down the river to the Copper Odinochka at Taral, or to the trading station at Nuchek in Prince William Sound; otherwise adventurous traders could take a route westward to the Susitna River, down it to Cook Inlet, and then to trading posts at Knik and Fort Kenai. Usually these routes were travelled in stages by successive middlemen traders. Hence, between the Han and the Russians at Prince William Sound were Upper Tanana, by certain routes also Northern Tutchone, Upper Atna, and Lower Atna. They also crossed Eyak and Chugach Eskimo territory but whether these two people asserted themselves as middlemen depends upon who is telling the story: Lower Atna or Eyak Indians (McClellan 1975b:228). The Cook Inlet route passed through Susitna and Kenai Tanaina lands (cf. Ketz and Arndt 1987). Allen, since he was leaving footsteps in new territory insofar as white explorers were involved, was very interested in knowing if Native peoples ever had matched his attempted exploit, i.e.,did they travel between the Copper and Yukon drainages by way of the Tanana River. He reported:

> The [existence of a defined] route from the Headwaters of the Copper to the Upper Tanana, and the finding on both sides of natives who had been to the Yukon River to trade, settles the mooted question "Do the Copper River natives visit the Yukon ?" ...Mr McQuesten, trader at Fort Reliance, and Mr. La Due, a

prospector, asserted that they had seen some Copper River natives as the post in 1883 [? That year the post was closed.] (Allen 1887:71).

Evidently, at least at a late date, it was possible to override middleman links and there was some communication with people from the Pacific drainage. Possibly such adventurous trips were reciprocated by Han travel in the opposite direction, towards the coast.

We may see Nuclaco-Fort Reliance as a secondary trade rendezvous, possibly with roots extending back into precontact times. The importance of this rendezvous increased when the short-lived Selkirk post was closed in 1852. And its importance undoubtedly waxed and waned as other trading stations opened and closed, Belle Isle at Eagle for instance and Fort Yukon. Of long-standing importance in the deep interior region, Fort Yukon nevertheless was closed for several years prior to the Klondike Gold Rush. A more important rendezvous, Noochuloghoyet (various spellings) was located near Tanana at the confluence of the Yukon and Tanana Rivers (Turck and Turck 1992). The arrival there of bands from the lower Tanana, from upriver on the Yukon, and elsewhere to trade with Europeans and Americans has been described in several accounts. Such rendezvous were a syncretism of Native and European trading activity.

Geography, or more specifically cartography provides important clues about exploration and trade. Figure 7.1 shows a portion of the Kandik map, drawn by Paul Kandik and lettered by François Mercier about 1880 or soon thereafter (Mercier 1986). The next figure, Figure 7.2, shows that this map is remarkably accurate in respect to the Tanana River which by the date of the Kandik map probably had been traversed only once by an outsider. This map, with its portrayal of overland routes and settlements illustrates the close relationships between the Upper Tanana and the Han Indians of 1880 as documented by Allen and noted by others. Allen (1887:137) reported that "all the Nabesnatanas [Nabesna or Upper Tanana]...readily communicate [in speech] with the natives around Fort Reliance and Fetutlin [Eagle]", and that they made trips there to trade with the whites. There is some earlier cartography and toponymy available for the upper Yukon drainage, based largely on the observations of Robert Campbell in the early 1850s (Arrowsmith 1854 map, Campbell 1958, Wilson 1970). Wilson (1970:133) states that Campbell provided cartographic information to one of the Arrowsmiths during a visit to London in 1853. Table 7.1 provides a concordance for comparison with the two map figures.

The study of river names is not an end in itself but is a preliminary part of any evaluation to assess the maps as historical and ethnohistorical documents and for clues to history through early toponymy. One item that especially invites comment is the failure of later cartography to pick up Arrowsmith's Blackston River (evidently Campbell's Blackstone and others' Chandindou), though the Chandindu was a route from the Yukon to a tributary of the of the Peel River that goes by the modern name Blackstone River. Peel River Gwich'in families (mainly Tukudh) occupied the latter area [Greer 1990]). These Gwich'in now are integrated with the Han at Dawson or living at Fort McPherson, but formerly they spent part of the year on the Yukon and part of the year at Black City and its vicinity on the headwaters of the Blackstone River. The

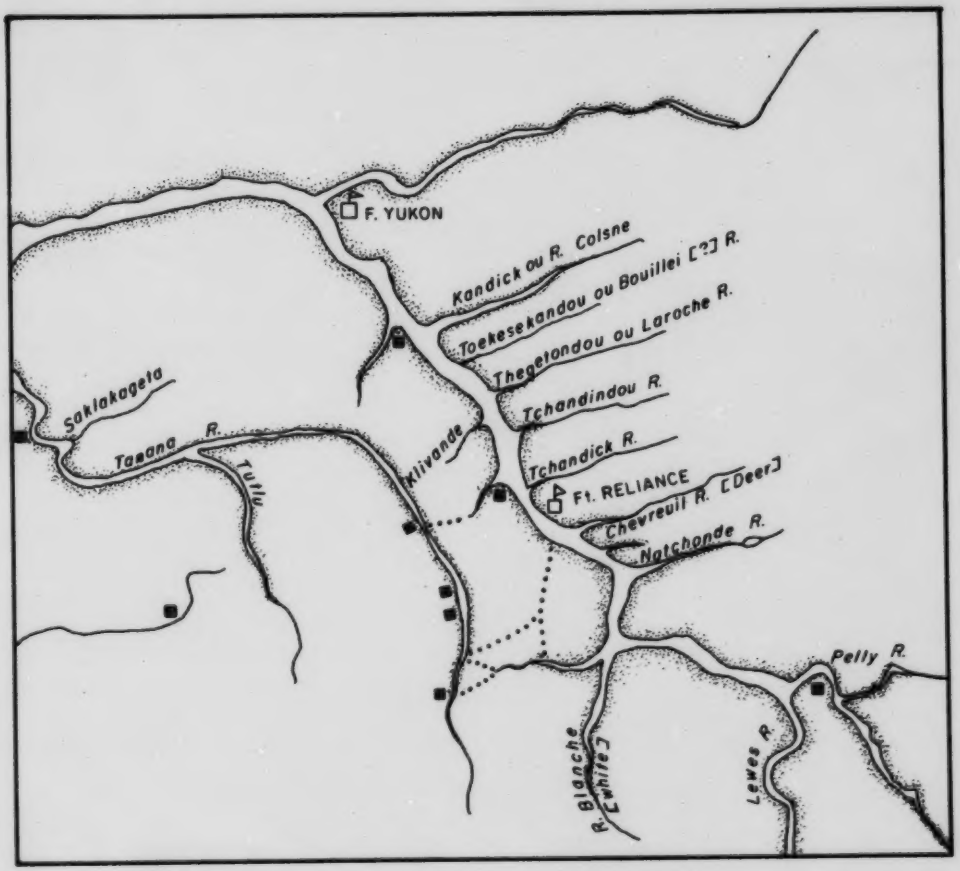

Figure 7.1. A portion of the Kandik Map (Redrawn).

point of interest to this discussion is the use of "Blackston" in both the Yukon drainage and directly across the hills for a tributary of the Peel River. Campbell's failure to mention the Deer (Klondike) River, a major stream, also is perplexing, especially inasmuch as he may be the original source for that name, but the transcription of his supplementary journal states that many place names are illegible, one case involving a river not far down the Yukon from the Forcier (which is on the Arrowsmith map not far above the Deer River).

Here our interest centers on the Kandik map and especially the evidence it bears pertaining to Han-Upper Tanana relationships. That this relationship was well established is suggested in Schwatka's statement that one band of the Takon tribe, i.e., of the Nuclaco people, who number about 60 persons, lived "over towards the head waters of the Tanana River (Schwatka 1900:341). Schwatka, whose report was first published in 1885, must have obtained this information indirectly

TABLE 7.1. CONCORDANCE OF RIVER NAMES, YUKON DRAINAGE

Modern	Arrowsmith 1854 edition	Kandik-Mercier	Schwatka 1885	Campbell 1958
Pelly	Pelly	Pelly	Pelly	Pelly
Yukon	Lewes	Lewes	Yukon	
White	White	Blanche (=White)	White or Yukokon	White
Stewart	Stewart	Natchonde	Stewart or Natchokon	Stewart
Sixtymile*	Ayonies	---	---	Swan?, Charles?
Indian	Forcier	---	Tal-loo-jek?	Forciers
Klondike	Deer	Chevreuil	Deer	---
Chandindu	Blackston?	Tchandick?	Chandindu	
Fifteenmile*	Blackston?	Tchandick?	---	Blackstone?
Fortymile* (Shitando)	Lolique Tatotlay?	___ Tchandindou (out of order)	Cone Hill	Lobiqui
Coal Cr. 1888	---	---	---	Willow?, Duck?****
cr. on W side	Tatotlay	---		Thu-tot-lay
Seventymile*	---	Klevande?	---	---
Tatonduk	Sheep	Laroche or Thegetondou	Tatonduk, Tatondu	Sheep
---	---	---	---	Thuk cho dese Flat Stone***
Nation 1896	no name	Toekesekandou	Tahkandik	Doch-hen-dee or Kettle?
Kandik	Antoine?	Kandick or Colsne	Kandik	Antoines or Cah-in-tisk
Charlie 1898 Charley 1902	Eddy?	---	Traodee	Moose or D'tayocktuck?**
Porcupine	Porcupine	---	Porcupine	
Salcha Salchakaket	---	Saklakageta	---	---

*These names necessarily postdate the founding of Fort Reliance.
** River just below Village Island, the village possibly Charlie's.
*** Campbell notes an Indian community just above its mouth.
**** In his early October 1851 trip up the Yukon, Campbell estimated that Duck R. is 3 miles below Labiqui River and 7 miles below above Reids Rock. Willow River (noted by Campbell on a different trip) is in the vicinity. Coal Creek is 5 miles below the Fortymile Rivers and above Old Woman Rock by about 8 miles, and thus can be identified

as Duck River. Campbell also noted a Frasers Rock about midway between Duck River and Sheep River. Coal Creek is itself an inconspicuous stream overgrown with willows at its mouth, and there is no other stream in the vicinity to which the name "Willow River" might be applied.

through Native sources or from the traders. In relation to the other maps, the Kandik-Mercier map has mislocated the Chandindu River. This map reportedly is the product of Paul Kandik lettered by Mercier, but unless Kandik was exceptionally well travelled part of the intellectual content probably is Mercier's. Here I am referring to the identification of such locations as the Anvik River, on the lower Yukon, and the reasonably accurate portrayal of the course of the Kuskokwim River in relation to the Yukon, suggesting access to other cartography.

As a statement of the cumulative knowledge of two persons--one Native, the other an outsider--the map remains a significant achievement. Six Tanana River settlements are shown (as small boxes), as are the routes between Han territory on the Yukon and the adjacent upper

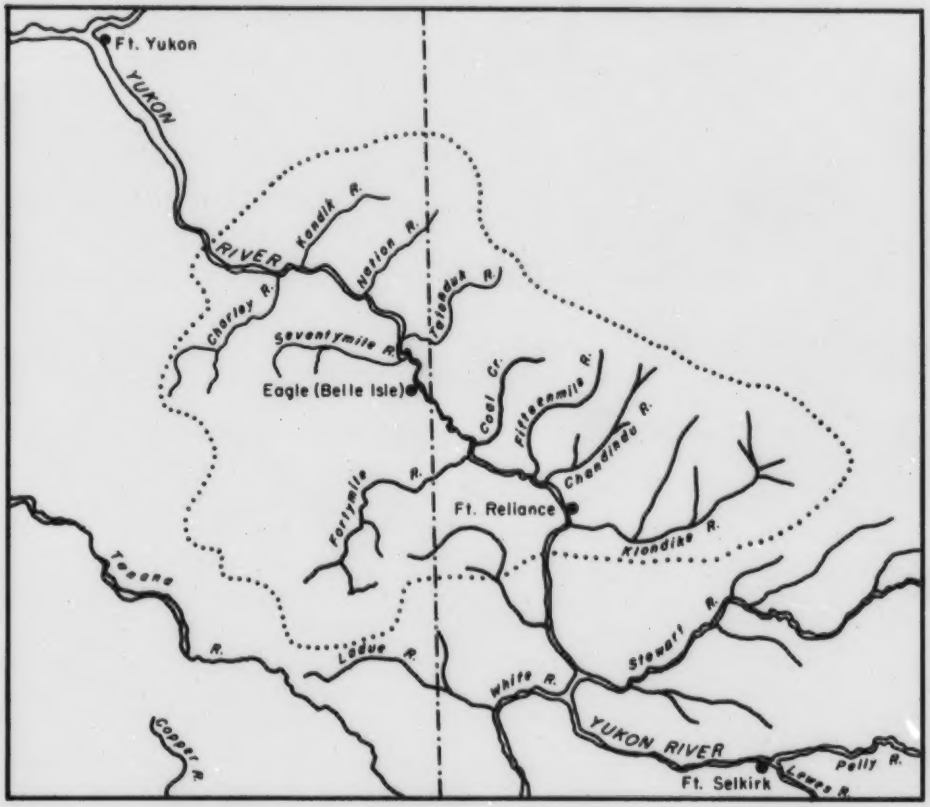

Figure 7.2. Modern river names and courses of the Kandik map area.

Tanana region. At the time Mercier was in Alaska and the map was drawn (1880 according to the Bancroft Library, certainly no later than 1885), these routes had been little traversed by prospectors and were mostly unrecorded. Many details are illegible on the copies of the map to which I have access, but one obvious element is the portage routes. One route, that takes off from what appears to be the Klevande River bears the notation "6 jours au...." This may be the Belle Isle-Tanana route reported by Schwatka (1900:345) which he stated required about 10 days to traverse. Another route takes off for the Kechumstuck/Lake Mansfield vicinity from a stream that could be the Fortymile River. The Fortymile Route was sufficiently well known to both Natives and miners to be recorded in the Dictionary of Alaskan Place Names (Orth 1967). For details of the Upper Tanana territory see McKennan (1981: Fig.1). A third trail extended the considerable distance overland from near the mouth of the Klondike River. This trail hooks up with a complex of trails, including one evidently from the head of the Ladue River reaching the location of present-day Tetlin. The last may be a segment of one Schwatka (1885) reported as a direct route from the Tanana to Fort Selkirk which bypassed the White River (from the mouth of the Ladue one could go across to Fort Selkirk).

Shortly after the Kandik map was drawn, and Schwatka had drifted down the Yukon, Allen recorded complementary information from the upper Tanana River. The settlements represented by rectangles on the Kandik map take the names of group leaders on Allen's map; the termini of trails are named; trails are plotted; and travel times given (Allen 1887:76, 137). Allen's settlement names have been converted into modern place names by McKennan (1981) and Guédon (1974).

Apparently, the Han were not stay-at-homes. We have noted their arrival at Fort Yukon, among potentially hostile neighbors, the year after that post opened. The Fort Reliance trading post did not hold them to their home territory. Han are recorded at Tanana, and some continued to patronize the old Hudson's Bay Company after it moved to Rampart House on the Porcupine River. Sims stated that members of this, Han, tribe, on a visit to Rampart to trade, had invited him to minister among them in their home territory (Wesbrook 1969).

There also is an earlier map, dated 1853, prepared by Hardisty, one of Murray's successors at Fort Yukon. The Hardisty map is of especial interest as it gives the location of the indigenous groups of eastern interior Alaska and the adjacent Yukon (but not wholly without errors [McClellan 1981:37 Fig. 1 and comments]). Below the Deep (White) River on Hardisty's map are the Ahyunais (identified as Northern Tutchone). This name is in accord with Arrowsmiths Ayonies River, which probably is the Sixtymile, but is fully positioned in Han territory, and the Gens-du-Fou (Han) are located farther down the Yukon River completely west of the international boundary. Inasmuch as by this date we already have information from Campbell fixing the location of the Han, it appears that the labelling on Hardsty's map simply is displaced.

7.2. THE CONDUCT OF TRADE

Very little that is both reliable and specific to the 1870s and 1880s has been recorded on the conduct of trade, the products exchanged, and prices paid in the Yukon drainage. VanStone (1979) has discussed the lack of information for the middle-lower Yukon region, and similar observations would apply to remoter posts like Fort Reliance. There are some lists of goods warehoused at or shipped to such diverse locations as Fort Garry, Manitoba in 1864 by the Hudson's Bay Company (Wilson 1970) and to Kodiak, Alaska by the Alaska Commercial Company when it succeeded the Russian American Company in 1867 (Huggins 1981); Murray (1910) notes items traded at Fort Yukon in 1848 and provides a very revealing word list giving Gwich'in terms for European goods; Zagoskin (in Michael 1967) lists numerous items traded by the Russians on the lower and middle Yukon in the 1840s; Cantwell (1902) gives an especially useful account of trades and contacts at the end of the century; and finally, there are numerous anecdotal notices of trade and goods exchanged. But none of this information completely applies to Fort Reliance, either because of differences in the clients served, the extreme remoteness of the trading post, or because the time periods are not coeval.

Tense relationships between trader and their Native clients, sometimes resulting in bloodshed and post closures, are cited in many accounts (Allen 1887:91,Chase 1947, Murray 1910, VanStone 1979:125 ff, Schwatka 1900), although most of the time relationships were amicable. A major cause of contention was the Indian perception of being cheated. This was especially the case when prices fluctuated according to the state of the fur market, or when, as in the 1880s after the merger of the competing Alaska Commercial and Western Fur and Trading companies, deep discounting of the price of goods (and concomitant high prices for furs) was discontinued. New competition arrived again in the early 1890s, and once more price differentials and hard feelings nearly led to bloodshed but, as it was in the traders' interest, an accommodation was reached (Chase 1947:215-216). For remoter posts, as at Fort Reliance, agitation by medicine men also is cited as a cause of conflict (Schwatka 1900), though the only serious incident recounted by McQuesten occurred when two Han died from eating poisoned rat bait. Another factor that bears considering is the organization of indigenous trade which often was carried out through partner relationships. Partners were leaders or "chiefs" who dealt with one another in behalf of their relatives and adherents. To what extent was this relationship extended to the white trader?--a question in part addressed by Coats (1982) and Legros (1981,1984). Tensions resulted when white traders failed to recognize that this system existed and encouraged all persons to trade directly with them rather than through the chief. Relationships between trading partners were usually amicable, but this was not always the case. Often one or both partners behaved arrogantly, and tried to intimidate and cheat the other. This lead to resentment, sometimes culminating in murderous reprisals. Trade easily became war. Moreover, trading could change to pillaging if one group was significantly stronger than the other. As Campbell stated, on the occasion of the first visit of Chilkats to Fort Selkirk in 1848, "[their] motto was 'might is right,' & who were civil only when they were the weaker party" (Campbell 1958:83). A similar sentiment later was expressed by Adney in regard to the Han of the Gold Rush period (Adney 1900a). Conflict, then

was potentially part of trade, whether it was aboriginal trade or trade with the white man.

At the end of the century the Dawson Han looked back to their earlier trading experience as embodying a mutual relationship between themselves and the trader at Fort Reliance:

> "[Chief Isaac speaking] First time, Jack McQuesten all same Injun papa; Yukon Injun all same her children. Just nup, McQuesten he gone; A.C. Company all same Injun papa; her children hungry." [At this time the A.C. Co was in fact short on food to sell to the miners, but Isaac's conversation led to a planned community moose and caribou hunt that not only provided the Indians with meat but with a surplus that was sold to the Company for cash.] (Adney 1900a:495).

VanStone, citing an 1875 Elliott source, describes a trading technique that is part of the folklore of Arctic trade:

> Upon reaching a settlement, he [the itinerant trader; some years the upper Yukon trade was ship-based itinerant] inquired of the inhabitants if they had any furs and if so, pitched his tent and unpacked his goods. Then he would seat himself near the tent opening and display his collection in such a manner that potential customers might look in and appraise the assortment. They would then, if they were so inclined, pass in their skins and indicate which items were desired.... The trader would examine the skins, toss them into a common heap, and tear off a piece of cloth or pass out tobacco or other items need to complete the transaction (VanStone 1979:116).

I doubt, though, that this was the technique of trade at Fort Reliance. Schwatka described McQuesten exercising the art of his profession at Fort Yukon. Or, it might be better to say, Native clients exercising the art of <u>their</u> profession inasmuch as what is recorded here very likely reflects elements of precontact negotiating techniques used by Han and others (see Legros 1981, 1984). At this time McQuesten was there only a few days with the *Yukon*, so he also was a visiting trading party.

> I was present at an afternoon parley with them [McQuesten and the Fort Yukon Indians], and was greatly impressed at the patience exhibited and required by traders..., a patience such as not one shopman in a thousand possesses...however great a haggler he may be. ... Indian No. 1 put in an appearance with a miserable lot of furs, and a more miserable story of poverty, the badness of the winter for trapping, the scarcity of animals and the inferiority of the pelts, his large family in heed of support, his honesty with the company in the past, and a score of other pleas. The trader replies, setting a definite price in trading material for the amount of skins before him, and the "dickering" begins. After half an hour or an hour's talk of the most tiresome description, the discussion ends in the Indian accepting the exact amount the trader originally offered, or about one-tenth his own demands. Indian No. 2, who has heard every word of the conversation, then comes forward with the same quality of furs and exactly the same story, the trade lasting exactly the same time, and with exactly the same result; and so on with all the others in turn. ... Then Indian No. 1 comes forward again with a package of furs of a better quality than the first he displayed, and solemnly affirms that these are the only ones he has left, and that if the trader will not give him enough clothing for himself and family, and enough ammunition to last through the winter in return for them, they must all go naked and perhaps starve.... This story, with its continuation, lasts about half as long as the first, but

> ends in the same way, as the Indian's eloquence has about as much effect on the trader as it would on the proverbial row of stumps. The farce is repeated by all the Indian in turn...during all of which time the white trader sits composedly on his stool... (Schwatka 1894:284-285).

The traders, on their part, had to deal with the Alaska Commercial Company. Allen (1887:91) reported that "the Alaska Commercial Company...furnished the traders their merchandise at 25 per cent above San Francisco prices, and charges a fixed amount for their transportation up the river. The traders in turn agree to transfer to the company all the furs they obtain at prices which probably do not exceed one-half their value in the San Francisco market." Few early Alaska Commercial Company records have survived. Dawson reports an estimate by François Mercier that approximately 9300 furs were taken down the Yukon annually from Canadian territory (1889:281). This information probably is current to about 1885 and it would apply to shipments from Fort Reliance, Eagle (Belle Isle) and also the steamboat-based trading at Fort Yukon. At best, half the fur listed below would come into Fort Reliance, or substantially less than half in the case of beaver because of habitat differences between the region around Fort Yukon and that around Fort Reliance. These figures reflect the importance of marten and the lack of a market in muskrat (though muskrat habitat around Fort Reliance is poor, it is very good near Fort Yukon). The cross and black fox figures below are reinforced by information that Allen received from Mcquesten (Allen 1887).

Beaver	1200-1500
Cross fox	100
Black fox	100
Red fox	300
Bear	300
Marten	4000
Otter	200
Lynx	600
Wolverine	150
Wolf	100
Total	9350

Mercier estimated the value of these pelts at $27,000 or about 3 dollars each (probably the price paid to trappers, not the fur auction price). No one got rich on a single fox pelt in that period. Many outsiders have commented on the low prices paid. VanStone (1979:125-126) relates that at Anvik, after the consolidation of trading companies, a black fox valued at $100 brought only $12 in goods, and a sliver gray fox with a retail value of $35-$75 sold for $4.00.

By the end of the century the Indians understood the use of money, though, according to Cantwell (1902:225) they did not accumulate money. In 1901...

> To a very large extent, business with the Indians is conducted on the basis of barter and exchange. ...the natives almost invariably demand a cash price for their furs, game and special articles of domestic manufacture, ...when dealing with the traders they seldom receive full payment in money.... If an Indian has, for example, a bear skin which he wishes to sell, he takes it to the trader and states the price for which he will dispose of it. ....The trader agrees to the price, takes the skin and then asks the seller "what he will have." A list of articles in trade goods is soon made up, with the assistance of the trader and when it is filled there is seldom any change coming to the Indian. (Cantwell 1902:152).

VanStone (1979) provides further details the shift to a cash system in the lower-middle Yukon area. Although this area had gone to cash-type reckoning, and even to the actual use of cash in the 1880s, I am not aware to what if any extent Native trade was done on a cash basis at Fort Reliance. The old Hudson's Bay reckoning in "made beaver" no longer was followed, but there was a new unit of exchange called a "skin",the value of which was set at $1.25 in the 1880s. I am not aware if this convention was followed at Fort Reliance.

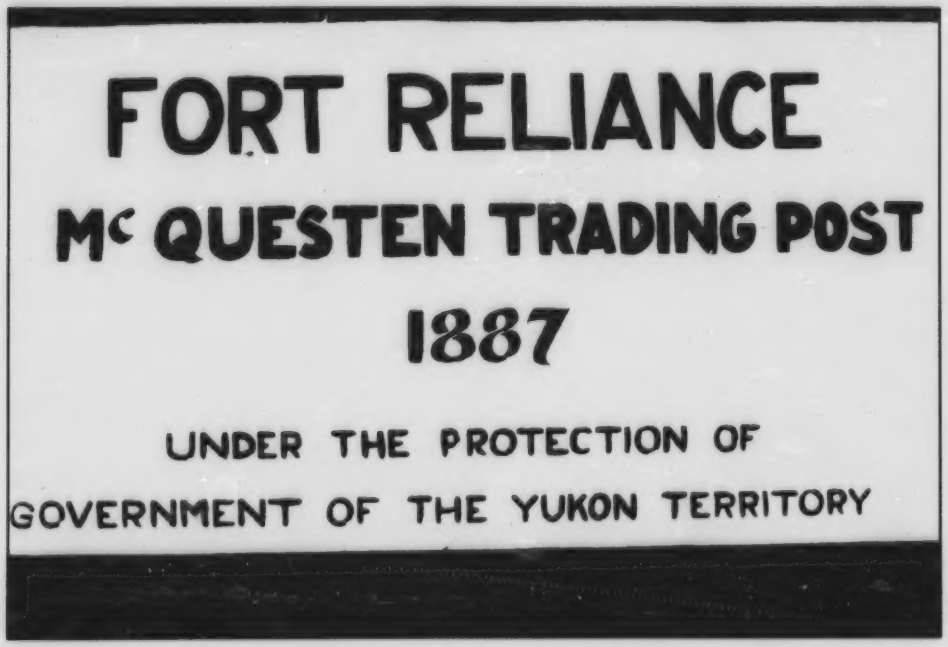

Figure 7.3. Sign posted on Fort Reliance until about 1990 (see in Fig. 1.4 left).

CHAPTER 8: INTERPRETATION AND DISCUSSION

In this chapter we discuss the components or periods of occupation at the site of Fort Reliance, in terms of both expectations and the evidence recovered including historical records. This type of analysis is a major concern common to archaeological interpretation. We also will address the problem of identifying houses belonging to the local Han, which has arisen because of the lack of any positive clues to the origin of the semisubterranean houses at the site. Another problem is to see if it is possible to distinguish population components--Native and white--on the basis of the collections. Discussion of the periods of occupation will be guided by a model for the various stages of white contact, and the first objective of this chapter is to develop that model.

8.1. A MODEL FOR PERIODIZATION

The following expectations can be held for occupation of Fort Reliance prior to the arrival of the traders in 1874. The model is based principally on the chronology of material culture evidence. The previous chapter has provided substantive information on trade and white contact--vectors for changes in material culture--and in that manner contributes to development of the model, but some additional specific data also are cited here.

Stage 1. Precontact (Prehistoric Occupation). For the southern and central Yukon and adjacent interior Alaska several sequent and regional archaeological phases have been defined that predate indirect European contact. They are characterized by stone and bone implements. The time depth potentially is great with broad technological and stylistic trends represented. Details have been documented by Le Blanc (1984), Morlan (1973), Shinkwin (1979) and Workman (1978).

Stage 2. Indirect Contact. Beginning between A.D. 1780 and A.D. 1800, this period gradually intensified as both interior groups and middlemen realized the potential of their respective roles as suppliers of furs and conveyors of European goods. A few items originating from trading ships that visited the West Coast or from Russian posts in south-central Alaska may have reached the Yukon interior during the last decades of the eighteenth century and the first decade of the next century. However, they would be found so rarely in archaeological sites that in many cases it may not be possible to distinguish between earliest indirect contact and precontact contexts.

Progressively though, the archaeological visibility of contact should increase, leading to 1847-48 when Fort Yukon and Fort Selkirk were established. By the date these posts were built, Chilkat Indian traders were taking European manufactured goods inland from the Pacific Coast at least as far as Fort Selkirk, near the confluence of the Pelly and Yukon Rivers. Earlier, Tlingit trade may not have been that extended. Other goods, largely of Russian origin and not numerous,

reached the interior through Atna and other intermediaries by way of the Copper River and Yukon River routes (Arndt 1990, Ketz and Arndt 1987). More extended trade links, probably through several middlemen, reached across the Rocky Mountains to Hudson's Bay Company and Northwest Company posts in the Mackenzie drainage, present from the end of the 18th century. Sparse evidence of this contact may survive in the occurrence of modest numbers of trade beads and through the indirect evidence of iron tool marks on bone implements and other carved objects. The actual metal tools, being highly prized, would have been recycled into other artifacts when the original implements broke or became too exhausted for refurbishment.

For the early years of this trade details of the merchandise brought inland by the Chilkat Tlingit seem to me to be sparse or imprecise, Legros' (1981, 1984) and McClellan's (1950) comprehensive summary of Tlingit-Interior Yukon trade notwithstanding. In this respect we can turn to the empirical reality of trade recovered from archaeological sites. But archaeological recovery falls short of informing us about the actual trade inventory inasmuch as foods become eaten, perishable items perish, metal is recycled to exhaustion, and uncommon items are recovered only by chance. Presently there actually is little that can be brought forth from Yukon archaeology to illustrate this period with requisite precision. Existing collections either are from sites that are poorly dated or cover a broad time span.

Dakah De'nin's village in Alaska, though, is a useful example. The site was occupied by lower Atna, a people who had both direct and indirect contact with Russian traders on the Gulf of Alaska and who were a link in a line of communication extending up the Copper River to the Han. We already have noted this trade but cannot say much about it for lack of information. The two excavated houses at Dakah De'nin are dated to 1816-22 and 1836 (Shinkwin 1979:11). A Russian trading post, the Mednovskaya Odinochka, was established not far from Dakah De'nin in 1822 (Grinev:1993:60) and closed in 1849-50. Doroshin, cited by Grinev, stated that the Indians received tobacco beads, pots and cotton goods among other items. Given their proximity to and direct contact with traders, one can expect the Atna to be better supplied with a greater variety of Russian goods than others who lived in the remote hinterlands. But the extent of European goods found in the two Dakah De'nin houses can be summed up as "not much"; specifically:

Iron debris (6 pieces)
Iron awls (2)
Iron unidentified implements (2)
5-inch iron spike (in the later house)
Dentalium (not necessarily obtained through Europeans)
Glass beads (modest collection of 61, tube type and probably 1 wound, tending to be small but not very small, and no white-lined cornaline)
Brass bell (in the later house)

From this assemblage we see a striking absence of many functional items such as those representing fire-arms and the tobacco complex. There are two explanations: firearms had yet to be traded to the Atna (numerous tips for indigenous weapons were recovered), and sparse

artifactual representation is characteristic of tobacco consumption (snuffing, chewing and smoking) at early Russian American sites. Clay pipes characteristic of English America were uncommon in Alaska prior to the American period, and even thereafter they remained uncommon at most sites. A further point to note is that native copper artifacts and discarded fragments are especially abundant at Dakah De'nim, and also are common farther north at Dixthada in the Tanana drainage (Shinkwin 1979:Chap. 9), and present in late-prehistoric layers at Moosehide near Dawson (J. Hunston personal communication 1994). Following this trajectory of abundance northward into the Porcupine drainage, where copper continues to be moderately common, it is predicted that copper tools should be common in late precontact deposits and indirect contact period deposits in the central Yukon.

The conclusion from Dakah De'nin that may be applied also to the central Yukon is that for the 1820-1830 period one can expect a very low archaeological visibility of indirect contact limited to glass beads, rare iron objects, dentalium (not necessarily European distribution), and rarely other items, all of which under-represent the actual extent and richness of imported technology. As well, bone implements of this period should show the use of iron tools in their fabrication.

Stage 3. Direct Extraterritorial Contact. This stage began in 1847 and extended to 1873 (a brief episode of direct home-territorial contact during Campbell's trips between Fort Selkirk and Fort Yukon excepted). With the establishment of Fort Yukon and, briefly, Fort Selkirk by the Hudson's Bay Company, the Han Indians were in a position to trade directly for European goods, though to do so they had to pass through their neighbours' territories. Even prior to 1847 a few Han may have made trading expeditions to more distant posts. The Han continued to have the presumed advantage of not having the foreign traders camped on and living off their own land. During the last four years of this extraterritorial contact period, the trade at Fort Yukon was taken over by the Alaska Commercial Company (Dall 1870, Raymond 1900, Whymper 1869). The Hudson's Bay post had had to move up the Porcupine River, closer to the International Boundary, and was less conveniently accessible to the Han Indians.

At an archaeological site there should be increased recovery of items on the lists of trade goods (above)--items that were lost, discarded or left in caches to which the owners never returned. These might include beads, buttons, ball, shot and gun flints, clay pipe sherds, recycled metal from brass cooking pots and scraps of iron. The arrival of the American traders can be distinguished by the presence of one-pound powder cans (usually recycled). For the first time firearms, especially ammunition, should be consistently present, even if the first muzzle loaders had been acquired slightly earlier. Beads would become more common and among the neighboring Gwich'in were prominent wealth items held by leaders and medicine men (Kretch 1987). The variety and abundance of metal artifacts and recycled scraps of metal would increase. Imported fabric clothing, preferred for summer use, may have been available earlier but by now had become sufficiently abundant for actual recovery, especially of buttons. Other recovery of fabrics might depend on their being frozen into the ground. Locally produced native copper tools may be expected to drop out of use.

Stage 4. Direct Home-Territory Contact. Direct home-territory contact, in the sustained sense, began with the establishment of Fort Reliance in 1874. However, trends unfolding in the wider region may have been of greater significance for the Han Indians than actual establishment of posts and overwintering of whites within their territory. The importance of this period lies in developments along the Yukon River during the prelude to the Klondike Gold Rush--changes in technology, settlement pattern, lifeways and the quality of life including health and mortality. The indicators of this period present a picture of ongoing change from the preceding period. With the arrival of whites in the Yukon, and as this stage progressed, there was at many localities a significant change from Native to white or mixed occupation. For the Fort Reliance site in particular, there was a major break between Han occupation to that of the Euro-American traders who brought in additional lifeways, technologies and institutions. However, Native use of the site and vicinity continued. Goods discarded and lost by the Han probably became increasingly abundant and appeared in new variety.

Close dating is especially helpful in periodizing archaeological remains, and this period can be best recognized through dated time-sensitive types of artifacts. For this purpose metal cans, the appearance of certain types of rimfire and centre-fire cartridges, painted ironstone ceramics, printed ceramics, and new types of glass beads are especially important. It is doubtful whether any Han had Henry repeating rifles before 1874, and in fact they may have obtained these weapons only shortly before Schwatka saw a few in 1883. Seed beads and white-lined Cornaline d'Aleppo beads arrived in the interior with the American traders, though we have as yet to identify the first shipment since almost no early trade invoices have survived for the Yukon drainage. Gun powder in one pound cans also was brought in by the American traders but, again, it would be of interest to know the date of the first shipment into the Yukon drainage, which could have been several years before Fort Reliance was opened.

Stage 5. Abandonment. Conditions found on a site may be peculiar to abandonment behavior relating to leaving a site or dwelling and to desultory continuing use. Structures and the ground are not maintained; are not used in the normal manner; are vandalized; fires may be built on the floor after stoves are removed; dogs may be kennelled inside; makeshift repairs made; and the areas and quarters are not kept clean and orderly. The site gradually reverts to nature. This stage may occur at various times in the sequence outlined above, but in the case of Fort Reliance, Stage 5 coincides with a post-Stage 4 dating: we know exactly when the traders and overwintering miners left, which was in the spring of 1886. Details of any use of the site after 1886 by Han and others have not been recorded. Scavenging of the site for wood began in 1887.

Stage 6. Reoccupation of the Site. Thus, it is necessary to determine if any later use of the area has confounded the evidence from the main archaeological component. Here, this stage specifically addresses for the situation at Fort Reliance, but similar conditions also occur elsewhere. Concentrations of Gold Rush-period or later artifacts at the locus of the main building, and the superficial occurrences of late-type artifacts in the pit of House 1 indicate limited reoccupation of the site at about the time of the 1896-98 Gold Rush, or within the next

several years. This is in addition to sporadic camping within recent years.

8.2. EPIDEMICS AND DISEASE

A theme common to all the stages discussed above, with the exception of the Precontact Stage, is that visitors from outside the region were vectors of contagious diseases in epidemic and endemic proportions. For nearly every indigenous group the result by the end of the 19th century was decimation. The foot print of epidemic and disease though very broad and heavy is difficult to recover through archaeological techniques. Physical anthropology (human osteology) is unable to provide a linear profile (through time) because of the limited nature of the actual and potentially recoverable sample from the Western Subarctic. Contact period archaeology is limited by the fact that it is the last period for which there is an archaeologic record distinguishing indigenous peoples, hence there is no ongoing comparative archaeological perspective. But in the place of that perspective there is the benefit of the written or first-hand records of modern times. Although the archaeological evidence recovered from the Yukon does not appear to illuminate regional epidemiology, we cannot ignore this topic as the health and state of Native populations undoubtably affected the conduct and extent of trade both among indigenous groups and between Natives and white traders. Trading expeditions and the establishment, continuity and closure of trading rendezvous and trading posts were at stake. The Han were at risk from at least 11 epidemics or events introducing disease into the northwestern interior during the 19th century, though they probably escaped relatively untouched in several of the instances outlined below.

It may never be known whether any of the small pox epidemics of the early 19th century, especially 1839-40, reached the upper Yukon region though there was a potential for its introduction by Tlingit traders (see Fortuine 1989:230 ff). At the time of the Han visit in 1847, Murray reported that several of their women had died the year before, the cause attributed to a malevolent shaman in another tribe from which the Han had stolen a woman (Murray 1910:51). This undoubtedly can be seen to be the result of a contagious disease. Possibly reflecting the same epidemic, Gotthardt (1987: Table 4) notes that in 1848 there was illness among the Han after visits to Fort Selkirk and Fort Yukon. Campbell notes deaths on several occasions, in the vicinity of Fort Selkirk, but it is not clear if any are to be attributed to contagious diseases. In the 1850s small pox spread from the Tlingit of the coast, up the Alsek River into the interior, decimating several villages (Gotthardt 1987), though it is not known if the Han were stricken. Scarlet fever spread to the interior by the same route in the early 1860s, though again it is not known if the Han were affected. A severe epidemic of influenza struck the lower Atna of the Copper River in 1865 (Grinev 1993), and this could have put the Han at risk through their trade contacts with the Atna. In 1865-66, scarlet fever raged from Fort Yukon, where it was introduced by Hudson's Bay Company boat crews, down the Yukon to the lower ramparts in (Arndt 1990, Coates 1982:69). Whether or not this is the same epidemic reported as influenza among the Atna, the Han undoubtedly also suffered as a consequence of their proximity to and contacts with Fort Yukon. There was further illness at Fort Yukon in 1868 (Gotthardt 1887: Table 4). Five

years later dysentery was reported among the Han, and a number of children died (Gotthardt 1987: Table 4). The next report of an epidemic sweeping the region is in Sims' journal for 1883. He notes its devastating effect, but mainly on the Gwich'in tribes such as those who lived in the Porcupine drainage the middle Yukon (Wesbrook 1969:41). This was the epidemic or part of the series of respiratory illnesses, pneumonia and diphtheria that depopulated many villages in western Alaska and also troubled the Tanana, neighbors of the Han, in 1882 to 1884 (Fortuine 1989:210-214). Apparently, the latter were spared. Again, many were dying among the Han in 1887-88. With the gold rush in 1897-99 more diseases were introduced into the Yukon, affecting Selkirk, Stewart River and Han Indians and decimating some Northern Tutchone bands (Gotthardt 1987: Table 4).

Through all this though, there are no accounts of severe decimation of the Han. Murray's 1848 estimate (1910:82) setting Han numbers at 230 men (incidentally the largest group in the Fort Yukon trading sphere) is close to Schwatka's estimate nearly four decades later. However, we should not ascribe precision to these estimates, and the territories encompassed may differ slightly. Osgood (1971:32-33), for instance, extrapolates "230 men" to indicate 1000 Han of all ages and sexes about 1848 and compares that figure with his estimate of half that number during the last quarter of the nineteenth century. In fact, if the Han did escape decimation they would have been exceptional among the groups of the Northwestern Subarctic. Loss of clients through their premature decedence is one of the hazards that traders faced. But sometimes the population of trading post localities became reestablished through the arrival of new recruits from hinterland regions, attracted in some measure by the trading post community. These are events that appear in some post records and historic accounts (but Fort Reliance excepted).

8.3. PERIODS OF OCCUPATION AT FORT RELIANCE

Stages of contact history have been defined and their characteristics specified above. Next, we will discuss the evidence from Fort Reliance as it relates to these stages. When applied to specific cases, and assigned dates, the stages become periods.

8.3.1. Stages 1 & 2: Precontact and Indirect Contact Period

Several lithic implements--an end scraper, a projectile point, some utilized flakes (unformalized scrapers) and more numerous waste flakes or stone chips--were found below soil zones that contained imported manufactured items (a few additional lithic tools and especially hide scrapers are more recent). These artifacts form a sparse distribution that extends over the entire site in Test Pits A, C, E, J, M and P and elsewhere. However, most artifacts and structural information from Fort Reliance are attributed to later occupation, particularly to Stage 4.

These finds probably are derived from many site-use episodes and could date over a range of several decades or even centuries. Their context appears to be late precontact in age, but they

are not dated, nor, in this case, are they datable within close limits. Calcined bone could be dated by the radiocarbon method, but there are uncertainties regarding the reliability of dates on calcined bone and less propensity to submit that kind of material for dating now than has been the case in the past. Other dating techniques such as obsidian hydration dating (a few obsidian artifacts were recovered) and thermoluminescence dating of fire-cracked rock are too imprecise to be of use in this context. Because of methodological vagaries any date on Fort Reliance material of more than a couple centuries by these techniques would trigger serious reservations over its acceptance.

Manufactured imports entering the country during the period of early indirect contact probably were few and the chances of recovering any of them in an archaeological site is small. One item possibly belonging to this period is the bone or antler arrow point. The type is precontact but the tool used to make the point appears to have had an iron blade. The limited test excavations actually do not adequately demonstrate that the artifacts under consideration are fully precontact, or prehistoric in the Western sense, to the exclusion of possible dating to the early 1800s, the period of indirect contact. Nevertheless, the lithic component at Fort Reliance, excepting hide scrapers and a few items that continued in use in later periods, certainly predates 1848 and may predate 1800.

Potentially the occurrence and distribution of fire-cracked rock is of considerable value for understanding the site. Such stone is very extensively over most parts of the site, but not in the houses. Earlier we noted that the principal mode of genesis of this stone was the stone-boiling technique of cooking, and therefore it is diagnostic of times predating the acquisition of cooking kettles. To use this indicator with confidence it is necessary to know precisely when kettles became available and to what extent activities other than stone boiling are responsible for the generation of fire-cracked cobbles. I will leave this research for another occasion, but it may be recalled that Campbell reported people cooking by stone boiling, in baskets, in 1851. Kettles actually became available much earlier in the northwestern Subarctic and therefore the 1851 date is surprisingly late. Russian traders brought kettles to the Pacific Coast, and traded them, before the end of the eighteenth century, and kettles were among the first wares they brought in the 1830s and 1840s to their posts in western interior Alaska. Murray (1910:72) relates that in response to competition from Fort Yukon, the Russians halved the price of their kettles traded at the mouth of the Tanana River to 10 skins. Whether or not his information on prices from Native sources is accurate, it shows that kettles were traded in the remote interior region by 1847. Kretch (1987) also cites Hudson's Bay Company records indicating trade in kettles, among other items, during the first half of the century in northwestern Canada. For Great Bear Lake in the District of Mackenzie, where contact with traders was half a century earlier than in the remote centre of interior Yukon, stone boiling was still used in 1812 (Keith in Masson 1890:120), and Osgood (1932:39) recorded that use of metal kettles replaced stone boiling within the memory of people living in 1928, thus making a late 1850s date reasonable. Keith remarked that those who continued with the old technique were poor families who could not afford to purchase kettles. Closer to Fort Reliance is Paxson Lake at the northern edge of Atna territory in Alaska,

where fire-cracked rock was found associated with the hearth and with painted ironstone ceramics in a housepit that according to Ketz (1983) dates to about 1875. This late occurrence clearly indicates that the etiology and distribution of fire-cracked rock requires further study.

8.3.2. Stage 3: Period of Extraterritorial Direct Contact

There is reasonable expectation that some of the items found at Fort Reliance were brought in from the visits to trading posts before the arrival of McQuesten in 1874. But because of their mode of occurrence in thin unstratified deposits it is almost impossible to separate these artifacts, except sometimes on the basis of typology.

There were two subperiods of extraterritorial contact for the Han. The first extended from 1847 into 1869 and is characterized by the dominance of the Hudson's Bay Company and its goods, traded primarily from Fort Yukon. In the second brief subperiod, extending from 1869 to 1874 American suppliers were dominant, especially the Alaska Commercial Company who traded at Fort Yukon at this time. Items acquired at an earlier time and discarded or lost later may blur the distinction between periods in the archaeological assemblage. What this periodization means in terms of trade items potentially recoverable by archaeologists was laid out earlier in the discussion of goods traded, but as has been noted the assignment of Fort Reliance artifacts is open to question. Prominent candidates include relatively large black and white tumbled beads, musket balls and some items not as yet recovered from the site such as flints for making fire and for flintlock guns and mirrors. The problem of differentiating subperiods would benefit from further research to date changes in merchandise and distinguish between British (HBC) and American goods. Kretch (1987) cites Hudson's Bay Company records that indicate changes in the preferred beads traded at Fort Yukon and elsewhere in northwestern North America. I am not aware, though, of any research that allows empirical identification of the bead types mentioned in the records, though potentially a matching of terms and beads is possible. It bears repeating that in the Yukon drainage one pound powder flasks and white-lined cornaline d'Aleppo beads and seed beads were brought in by the Alaska Commercial Company traders, perhaps first but not necessarily exclusively, though a few of these beads could have reached the Yukon from east of the Rocky Mountains where they appeared earlier .

At Fort Reliance, this period is represented mainly by drawing on evidence that fulfils logical expectations. The reason for this is that soil contexts are thin and shallow and the depth distribution of artifacts overlaps between periods. As well, some common artifacts such as white beads persisted from one period into the next period. The artifacts of the American subperiod of only five years duration probably cannot be distinguished from those the next period (Stage 4, home-territory contact) which were similar and were distributed by the same traders.

All artifacts from the structure floors at Fort Reliance date to the American trade, whether acquired at Fort Reliance after 1874 or acquired during the preceding five years from Americans elsewhere on the Yukon River and brought to the site. Judging from the abundance and types

of artifacts recovered, they likely belong to the actual period of Fort Reliance. However, the case may be different for collections from test pits in the open areas which in part could slightly predate the trading post. Excavation of larger areas may yield information that will provide a better basis for period sorting.

8.3.3. Stage 4: The Fort Reliance Period and the Periodization of the Structures at Fort Reliance

Most artifacts and structural information recovered from Fort Reliance are attributed to Stage 4, the period of direct home-territory contact, particularly to the years 1874 to 1886 when the trading post was open. In this monograph we refer to this time as the Fort Reliance period or phase. It would have been helpful if in their recollections McQuesten and Mercier had provided more detail on their stores, about the items preferred by the Han and others who traded at the post, and about concurrent and earlier Han use of the Fort Reliance site. As it is, archaeology may be in a position to fill the gap left by the shortfall in documentary records.

The artifact content of the several Fort Reliance structures varies in ways that may be chronologically significant on a fine-scale. This situation particularly involves the distribution of powder cans, white-lined cornaline d'Aleppo beads, seed beads, and small mauve coloured beads. The distribution of these elements and the proposed seriation of several Reliance houses is given in Table 8.1. Bead data upon which Table 8.1 is based are given in Table 8.2. It is possible that some of the data reflect only the idiosyncratic behavior or acquisitions of the inhabitants of particular houses and do not have the chronological significance I have assigned to them.

There are additional clues for dating the houses.

- All should postdate 1869, judging from the occurrence of the type of goods traded by the Alaska Commercial Company.
- The main building, House 7, was present in 1883-84, judging from the Everette sketch, and probably was one of the original structures built in 1874.
- Layering of deposits shows that semisubterranean structures 12 and 4 were abandoned and partially filled in while the trading post was occupied, i.e., before 1886.
- The back berm at House 1 overlies (and the housepit cuts into) a layer with historic artifacts, probably from the trading post, thus indicating that the housepit and berm slightly postdate 1874.
- Schwatka evidently saw the domed roofs of semisubterranean Houses 1-3 in 1883, which he said were then in disrepair.

The seriation does not necessarily indicate the order in which the houses were built but that of their last use or abandonment. Accordingly, semisubterranean House 12 was abandoned first. Next, Houses 1 and 4 were abandoned. This places a squeeze on the temporal placement of House 1 considering that stratigraphic evidence suggests that it was not built until a few years after the trading post was established. These houses were abandoned before seed beads were

TABLE 8.1. SERIATION OF FORT RELIANCE HOUSES
(Oldest to youngest from top to bottom)

House	Powder cans	White-lined beads	Seed beads	Mauve beads	Notes
12	+	o	o	o	One seed bead in fill above floor
1	o*	+	o	o	One mauve in fill above floor
4	+	+	o	o	Partially filled pit reoccupied
2	+	+	Rare	o	Four seed beads found on floor
3	o*	+	+	+	The mauve beads are seed size
7	o*	+	+	+	Used 1874 until 1886 abandonment

* Though they were not recovered, powder cans probably were in use.

introduced to the Native inhabitants of Fort Reliance. The site continued to be occupied, judging from the evidence of House 4. Next, sunken House 2 was vacated. Finally, by the time seed beads had become common in the area, and when small mauve (purplish pink) beads had just appeared, semisubterranean House 3 was abandoned. This must have been only shortly before Fort Reliance was closed in the spring of 1886, and log House 7 and probably the other log structures were vacated.

8.3.4. Stages 5 & 6: Period of Abandonment and Reoccupation of the Grounds

Several documentary reports account for the end of Fort Reliance. It appears to have been abandoned suddenly and completely when the traders moved out (Chapter 2). Evidently, within one decade, by 1896, surface remains had disappeared. The dry logs probably had been taken away to be burned for fuel.

Some artifacts were found exposed on the surface or barely covered with litter, moss and turf. In certain cases these surficial items appear to belong to the Fort Reliance occupation, but most appear to be derived from later short-term use of the site. Such use may have amounted to little more than overnight or a few days camping. There also is an accumulation of old-style food cans, probably dating to the beginning of the 20th century, that, judging from their numbers, is the product of at least several weeks residence on the site. Pit 2 and contents may be from the same occupation. Circumstantial evidence is against assigning the cans (and also egg shells in Pit 2) to winter occupation because of the need to keep liquid-pack canned goods from freezing and bursting. No evidence or record has been recovered for any permanent structures or cabins built on the site after the abandonment of Fort Reliance.

Later camping on the site includes the reuse of House pits 1 and 3, based on seeming disturbance of the soil there and the occurrence of late type artifacts. Presumably the depressions provided a small degree of protection for someone in a tent or improvised shelter. Area

TABLE 8.2. BEAD DISTRIBUTION, CERTAIN PERCENTAGE COMPARISONS

Context	Total	Within "Pony-size" Cane beads*				Cornaline	% of Total	
		Black	Lined red*	White	Various blue	Clear/** all lined	Pink-mauve***	Seed
House 1	110	2.9%	29.0%	27.9%	36.5%	36.7%	0.9%	0 %
House 2	204	5.1	24.7	64.4	15.5	56.2	0	2.5
House 3	234	0	40.9	54.6	4.6	33.3	6.4	70.2
House 4	81	1.3	22.8	68.4	7.6	72.2	0	0
House 12	195	17.3	11.0	66.5	5.2	96.2	0	0.5
floor	131	4.6	14.5	75.6	5.3	100.0	0	0
House 7	563	0	2.1	2.1	5.0	33.3	32.1	75.0
Pit K	42	0	11.8	20.6	0	50.0	33.3	19.1
House 10	40	5.4	16.2	64.9	13.5	0	0	0
TP A-C	93	22.9	3.2	75.3	0	33.3	0	0
Pit 3	38	0	0	11.4	80.0	---	10.5	2.6
TP M@	1420	2.8	5.4	9.6	68.6	4.6	11.7	14.1

*The pony size category, excludes seed beads, wound beads and facetted beads. The lined red beads are comprised of the two types of Cornaline d'Aleppo beads.

**"Clear/all lined" indicates clear-lined Cornaline d'Aleppo beads as a percentage of all lined Cornaline beads.

*** Pink-mauve occur as both small pony and as seed beads.

@ The occasional seed-pony size intergrade (as listed in Table AII.8) is reported with the seed beads except in the case of Pit M. There there were 799 blue beads (56.3% of total) of intermediate size which are included with the pony ("Various blue") beads.

excavations probably will uncover traces of other late camps or tent sites in open areas. Large mammal bones found on the surface behind House 1 may also be from later reuse of the site, in this case by Native persons since surface deposition in dry areas behind camps is a proper mode of disposal for land mammal remains. For late times it is difficult to distinguish ethnicity on the basis of technology, but modes of processing animals, such as breaking up bones to extract marrow and bone grease were an ongoing feature of Native lifeways. At Fort Reliance there are two sawn bones, probably attributable to miners or traders. Most of the remainder had been broken up. Since the traders may have been accompanied by their Koyukon-Russian creole, who likely also made bone grease, the fact of bones being broken into pieces cannot be used to distinguish between trader and Han provisioning.

Important markers of the period after the trading post was vacated are wire nails and 30-06 cartridge cases which had appeared in the area by the time of the Klondike Gold Rush (1897).

Additional items include food cans, though some cans date to the Reliance period (Stage 4), and sheet metal plates. It is not always possible to distinguish between Reliance period items and later ones simply on the basis of their occurring high in the turf or on the surface. For example, a one-pound powder can was found wholly on the surface and some metal from the turf was being recycled, a characteristic of the Reliance period of occupation.

8.4. COMPARISON WITH POSTCONTACT HAN SETTLEMENT AT EAGLE

Nibaww Zhoh at Eagle is the Athapaskan site closest to Fort Reliance (Andrews 1986). There are two reasons for examining this site. First, it is a parallel example for Direct Home-Territory Contact (Stage 4) and thus provides a comparative perspective in relation to Fort Reliance. Second, both Natives and white traders lived at Fort Reliance while only Native Han lived at *Nibaww Zhoh*. The latter thus provides some degree of control for factoring the Fort Reliance assemblage into Native and trader (and miner) components. Near Eagle, it may be recalled, there were the Belle Isle trading stations that were largely contemporary with Fort Reliance. The site consists of eight shallow, oval housepits, each measuring about 11 by 15 feet, furnished with a central hearth, and surrounded by slight berms. The name *Nibaww Zhoh* reportedly means skin house, and that indicates the type of dwelling that was built there. The dome-shaped skin house, sometimes erected over a slight depression, is a well documented Athapaskan type, reported for the Han among others, and stands in contrast to rectangular moss houses and semisubterranean houses. Andrews points out that elders identified this house type as being for winter occupation, and the site as a winter settlement. Although Nuclaco was a summer fishing settlement and rendezvous, the Fort Reliance trading post was largely an autumn to spring (to breakup) operation and the houses there probably were occupied primarily during the winter. Thus, in that respect Fort Reliance and *Nibaww Zhoh* should be comparable.

Andrews' narrative account names several artifact types or categories that correspond to those recovered from Fort Reliance, and only a few that do not, as listed below.

Stone hide scrapers, several (*taay doo*, equates to *tci-tho*)
Rectangular whetstones, of local material
Barbed antler arrow point
End of the bone scraper or fleshing tool
Glass from square-based bottles with faceted panels
Ironstone bowl sherds
Scissors
Square-cut nails (no wire nails)
.44 rimfire cartridge case
Early model centrefire cartridge cases
Musket ball .32 gauge
Percussion cap container (lid)
Metal button
Milk-glass buttons
1800 glass beads, more than 85% white cane & a few white-lined red
(Seed beads relatively uncommon)

Tobacco stamp
Metal can fragments (small fragments, can types not identified, no cylindrical cans recognized).

In addition, there were several artifact types not recovered at Fort Reliance:
Snowshoe netting needle
Foil or nameplates from bitters bottles
Saucepan handle
Steel axe head (used as wedge)
The major portion of a cap-lock shotgun
Harmonica reed plate

At Fort Reliance there are a number of artifacts not present in the Eagle collection, but inasmuch as the one was solely a Native site, the other also occupied by miners and traders this is to be expected and, as well, only two of the eight houses at Andrews' site were excavated. Altogether, there is a high degree of correspondence between the artifact inventories likely used by the Han. Recovery of nails from hide dwellings may indicate that the nails were being put to applications other than house construction. Evidence from the Eagle site confirms that the Han there had early model centre-fire rifles, as well as the .44 and muzzle loaders, and the case may be the same for those who lived around Fort Reliance. The latter site shows more cans, possibly including cylindrical cans, in Reliance-period contexts, though most food cans there appear to be later. There is a question as to whether the Han actually purchased canned goods or whether they simply recycled, for their metal, cans discarded by traders and miners. Regarding the beads from the two sites, the closest comparison is with the southern area or housepits at Fort Reliance. In both instances white is the most common bead, the House 3 collection from Fort Reliance turns out to be atypical (within the context of the other Reliance housepits and *Nibaww Zhoh*). The Eagle bead collection reinforces the interpretation that the large Test Pit M collection is best characterized as a late traders' stock. An evidently very low incidence of clear-lined red cornaline d'Aleppo beads at *Nibaww Zhoh* is perplexing, but the variability of individual house assemblages can be cited in explanation. The ironstone sherds at the Eagle site may all come from a single bowl, and this conforms with the fact that pottery was not particularly abundant in the Fort Reliance housepits with the exception of House 12. With these allowances, then, the two site assemblages almost are identical, but with different house types.

8.5. TRADITIONAL HAN HOUSE CONSTRUCTION AND THE ORIGIN OF FORT RELIANCE PIT HOUSES

Identifying the model of semisubterranean house built at Fort Reliance poses a problem that will launch us into a comparative study of houses in the Western Subarctic, especially as this house is not readily identified as belonging to the Han. For comprehensiveness we will consider several dwelling types.

Osgood (1971) reports two types of permanent, non-portable Han shelters. One was the airy summer smoke house in which the family slept but which primarily was for hanging fish and

sometimes meat to dry. As an example of this type of structure Osgood offers the group at Johnny's village (near Eagle) described by Schwatka. This structure was not banked and the floor was not depressed. Thus, it was very different from the semisubterranean dwellings at Fort Reliance. This smoke house evidently is the type of structure Sims saw at the lower (northernmost) Han village, upon which he remarked favourably: "These were the first Indians I have seen in this part of the country who live in houses; I think, however, they only do this in the summer, as in the winter they are generally on the move" (Sims 1886:53, emphasis mine).

The other permanent structure was the so-called moss house which was occupied during the cold months of the year if the inhabitants were not travelling. Osgood was told by the Han that their house was nearly identical to the Peel River Gwich'in equivalent. This structure could be either semisubterranean--built in and over a dug pit--or constructed wholly on the surface. There may be some question as to whether any description of the Han moss house actually exists. Osgood's (1971:84) description is borrowed entirely from that given by him for the Peel River Gwich'in. Considered retrospectively, details appear to be incomplete or at least they lack verification. Nevertheless, Osgood states that in 1932 recollections of the aboriginal forms of shelter were especially vivid among his informants. If we accept his description, it appears that the Han house with depressed floor or *nà kún* had only a single ridge pole and single centreposts at each end (the Fort Reliance houses had no post centered at the end which would have blocked the entry), was very high in the centre with 3 m head space, had sides, probably ends too, of vertical poles or slabs of wood, and was well banked and covered with turf (moss) and dirt. There was no entrance passage--just a hole in one end wall covered with a hide. Potential confusion in the comparison of houses may be averted if the basic architectural plan and set of architectural principles is understood in the place of ill-defined terms with meanings that vary from author to author. The plan above can be translated into either a quickly-erected, light-weight surface structure of brush or into a substantial semisubterranean dwelling built with heavy timbers, thickly banked and covered with soil and turf, and probably reoccupied and refurbished many times prior to abandonment. Table 8.3 compares the attributes for this type of house as it is reported by Osgood (1971) and McKennan (1959) for the Han (and Gwich'in) and Upper Tanana, and as seen in the remains at Fort Reliance. It appears that ethnographic descriptions of winter houses or the moss house for all these groups are incomplete, and this situation complicates our comparisons. Even the basic terminology for the structures used by different investigators may be an obscuring factor. Slobodin (1981), for instance apparently refers to "log"houses among the Gwich'in where Osgood referred to "moss" houses.

The possibility that the houses were built at Fort Reliance by Upper Tanana visitors also bears serious consideration. The Upper Tanana visited Fort Selkirk, Fort Reliance and later Fortymile, to trade with both the Native and white traders. Two types of more or less permanent Upper Tanana summer houses are reported by McKennan (1959). One type, often of large format to house several families, had a flat or shed roof and bark walls composed of bark sheets held in place between upright poles driven into the ground. The other type, which has some cabin attributes, McKennan (1959:71-73) thought could have been introduced. It is even more likely

that his Upper Tanana house was a modified indigenous form using some features of construction copied from European-American cabins. He describes it as follows, apparently on the basis of informant recollections:

> The Upper Tanana also made a log or pole house by driving pairs of parallel posts at the corners and on each side of the doorway and piling logs up between them, each log being tied to the corner posts.... The roof consisted of poles covered with either spruce bark or moss. ...Entrance was through a head-high passageway or anteway which also had a door, and this structure served to keep out the cold [this is the only one among several house varieties considered here that had an entrance passage]. There were no windows but the smoke hole was large, being about four feet square. As a general thing two families occupied such a log house, each family having its sleeping platform along one side, and both using the common fire. ...thenatives say that in the real old days they did not have such log houses...(McKennan 1959:72).

Further details are not given. Reference to keeping out the cold, though, indicates cold season occupation. Later in his discussion of this house, McKennan states that the structure was not sunken (p. 74, "the Upper Tanana form was built aboveground"). McKennan specifically notes that the absence of semisubterranean dwellings among the Upper Tanana is peculiar.

Unfortunately McKennan was reluctant to temper this ethnographic description with the plain evidence for historic semisubterranean dwellings in the region, for instance at the Dixthada site located near Tanacross (Tanana Crossing) and at Last Tetlin (Rainey 1939). Ironically, a house sketch based on de Laguna's 1960 fieldwork, published by Guédon (1974: fig. a), not only shows the Upper Tanana house set into a pit but also shows posts for twin ridge poles, and very small entries. Use of twin ridgepoles is an architectural principle widely used in Alaska which I had expected to find in descriptions of Gwich'in and Han houses (but did not). The report of a flat shed roof also seems peculiar. Twin ridge poles support only a narrow flat strip running along the top of the roof between ridge poles. Interestingly, although during his journey down the Yukon River Schwatka often commented on house form, it was not until he until he came to the point of describing the (lower) Tanana Indians that he reported "some of the tribe at the mouth of the river have underground houses, such as are in use among the Inuits, and are called by the Russians "barraboras" [he in reference to Tanana Indians though the observation may actually be for Koyukon people] (Schwatka 1900:346).

Rainey excavated and observed large numbers of Atna (Copper River) and Upper Tanana house pits in 1936 and 1937 but provides only fragments of description, possibly considering such information to be of little interest to anyone (Rainey 1939). And often, archaeologists are not likely to record negative evidence: if no entry passage is reported, there probably was none; if no posts are reported, probably none were seen; if pit depth is not commented on, it probably was shallow. For the Atna houses Rainey notes antechambers for the sweatbath, with floors lower than the main room, but he fails to describe any entryways. This fits ethnographic descriptions and indicates a house unlike the semisubterranean houses at Fort Reliance. For the upper Tanana region, including Dixthada above, he simply notes the presence of shallow rectangular

pits, said to be comparable to Slana and Gulkana houses which are those with deep sweat bath chambers and main rooms pits only about 30 cm deep. But an Upper Atna contact period house excavated at Paxson Lake also lacks any pronounced entrance passage, and as well lacks a sweat bath chamber, thus documenting variability in Atna houses (Ketz 1983:150). This variability notwithstanding, archaeological data, then, does not indicate any similarities between Fort Reliance and Upper Tanana and Upper Atna housepits.

For a further description of the moss house we can turn to Hadleigh-West (1963:301-307). West reports that this type of dwelling, the *kwant*, was used by the Netsi Gwich'in at their caribou fences--the only semipermanent settlement of these people. This rectangular type house had four corner posts, 5-6 feet high, bridged by stingers along the side wall. There were no stringers across the end walls. A single ridge pole was supported by posts at the center of each end. Poles and split logs then were laid or propped around the sides against the sidewall stringers and, against stout poles at each end of the roof. The orientation of the wall poles thus was almost vertical, not horizontal. Apparently, the entry was simply an opening left in one end wall, though West notes that information on this point is not clear. There was no entry passage, and the structure was not depressed or semi-subterranean. The only other dwelling structure reported by West was a domed or arched skin-covered tent.

From this discussion and the capsule descriptions presented in Table 8.3 it is evident that the Upper Tanana, Han/Peel River, and Netsi "permanent" houses are mutually dissimilar. Moreover, even although not all details have been determined, the Fort Reliance houses appear to be yet another format. It must be noted, however, that no reporting ethnologist or archaeologist ever saw any one these houses. Their information pieces together oral descriptions, perhaps imperfectly understood, derived approximately 30 years after the last of such houses had been occupied. Regardless of the state of the ethnographic information, archaeological surveys along the Yukon River above Fort Yukon, including the writer's own examination between Dawson and the boundary, have failed to find house pits similar to those at Fort Reliance. It is becoming apparent that in their design these houses are neither those of the Han nor those of neighbouring tribes.

Another option to be considered is that semisubterranean Houses 1, 2 and 3 (the less definitive House 12 excepted) were built under the direction of McQuesten's Indian-Russian interpreters. They probably were for the convenience of the Native clients of the trading post since the interpreters likely were accustomed to living in log cabins. In that case the architecture should reflect middle to lower Yukon River elements from the region of Ruby, Koyukuk Station and Nulato in Koyukon territory, or from the lower Yukon around Andreafsky, in Eskimo territory from whence some of the steamer crew came according to Sims (1886). During the last years of the 19th century it was the practice of some American traders to make housing available for their visiting clients. Nevertheless, there is some basis for not being fully satisfied with this hypothesis. The log cabin would have been the only dwelling type with which the traders had direct experience, though they would have seen semisubterranean houses still in use by Natives

along the Yukon River. Log cabins would not have required the labor input of digging the depression for the main room and entrance passage. Unfloored cabins of unprepared logs can be erected very quickly and easily. Finally, the Fort Reliance houses differ in some architectural details from Koyukon houses of the Koyukuk River (A. Clark 1994, Clark and Clark 1974) and adjacent reaches of the Yukon River, and from Holikachuk and Ingalik houses of the lower Yukon, in the pairing of posts that supported twin ridgepoles in the Alaskan houses for instance. Possibly they are an innovation drawing upon construction techniques and styles known to both Natives and Traders but never before articulated in the manner found at Fort Reliance. Further excavation and concomitant recovery of additional structural details of the Fort Reliance houses will either reinforce this assessment or otherwise provide evidence better relating the houses with those of Han and their neighbours.

TABLE 8.3. COMPARISONS OF NON-PORTABLE COLD-SEASON HOUSES*

Attribute	Fort Reliance	Han & Gwich'in (Osgood 1936, 1971)	Upper Tanana (McKennan 1959) Acculturated	Original type
Shape	Rectangular, nearly square	Rectangular, square	Rectangular	Rectangular
Size	14 ft to 20 ft	25 ft	Not stated	Up to 25-30 ft, or small version
Floor depth	80 cm below ground	46 cm bs or to frozen ground	None, not excavated	None, shallow pit
Walls	Banked, construction unknown	Banked with moss; sod & soil over vert. split poles	Horizontal logs, vertical corner posts	Bark sheets between upright poles
Roof	Covered with soil, construction unknown	Gabled, covered with moss & soil	Constr. unknown, bark & moss cover	Flat shed
Hearth	Unformalized, on floor near centre	Perched on built-up mound	Central, detail not provided	No data
Entry	Deep trench to middle of on end in wall	No trench, off-centre opening	Head-high passage	Skin door, no passage
Height	Undetermined 10 ft along centre	4-6 ft in corners,	Not stated	Not stated
Occupants	More than 1 family?	2 families	2 families	Several families
Other	Bark sheets & large cobbles used inside	Single ridgepole	Bark used in construction	in large variety

* The Peel River Gwich'in house is said to be the same in all attributes as the Han house (Osgood 1936). Osgood also describes a Crow River (Vunta) Gwich'in house in terms similar to the Peel River house except that the floor is not excavated below ground level.

Evidence from Eagle, the *Nibaww Zhoh* site in particular, shows that the skin covered lodge possibly was the principal Han dwelling used in the vicinity of Fort Reliance, particularly during the winter season. The oval, hide covered house was not always accompanied by a depression, thus in some cases ancient dwelling sites might not be readily detected. Even their presence at Fort Reliance would be difficult to determine without careful area excavation. Although this house type was portable, the installation over a prepared depressed floor and with banked walls often was semipermanent for an appreciable portion of the winter season. These lodges have been described for various Gwich'in groups, the Upper Tanana (Guédon 1974:55-56) and the Han. It is stated that sometimes before this shelter was erected the turf was removed, probably to lower the profile the dwelling had to exert against winter weather. A detailed description of the Han dwelling is quoted from Tappan Adney (1900) by McKennan (1959:71, best illustrated in Adney, also McKennan 1981:Fig. 11) who rates it as a semipermanent lodge. McKennan considers the domed, oblong skin lodge with discrete halves occupied by two families to be a specialized development of the double lean-to (1959:75). Summer and winter varieties varied according to the extent of skin covering and banking of the exterior for insulation. Such dwellings do not have to be land-based in the winter. Hayne (1897:84-85) reports: "It was a common sight to see a good-sized encampment of Indians with fires burning merrily, pitched right in what had once been mid-stream, and there they would stay during the winter, even erecting such comparatively permanent things as 'caches'--small store-huts raised on long supports above the level of their dwelling-huts..."(accompanying illustration shows four domed tents on the ice). The implications for archaeology of this settlement mode are obvious. Summers too, the Han liked to be close to the water, as shown in the photograph of Chief Isaac's salmon racks at the mouth of the Klondike River (Adney 1900b:280).

These dwellings do not adequately explain or fully exhaust the evidence. Rectangular housepits are present in the upper Blackstone drainage, at the site of Black City and Fort Reliance (Greer 1990; writer's field observations). These pits are smaller than those at Fort Reliance and lack entrance trenches. Also, there seems to be no fill over the floors, which however were not tested by the archaeologists (Greer 1990), so they must have had a light hide-covered roof. But their rectangular format does not support any identification as the depressed floors of ovoid skin tents.

In summary, three or four types of houses probably were occupied in the vicinity of Fort Reliance and Nuclaco during precontact times: (a) the summer "smoke house" reported from the vicinity of Eagle by Schwatka and Sims; (b) the moss house, best known from adjacent tribes of the Gwich'in group but stated by Osgood also to have been a Han house; (c) the semi-portable, ovoid hide-covered house for which there probably were winter and less substantial summer variants. Several reports confirm these structures in the Dawson-Fortymile area. Everette's sketch of Fort Reliance could be interpreted as showing such a structure, but his rudimentary portrayal equally could be interpreted as the domed roof of one of the ruined semisubterranean structures observed a year earlier by Schwatka; (d) the summer shelters or brush camps reported by Schwatka for the Northern Tutchone village of Kah-tung, described here in Chapter 6. These

are double lean-tos constructed of spruce brush and partially covered with hides. They may be a version of the summer oval hide-covered shelter which, it has been noted, employs elements of double lean-to construction.

As a final word on the houses at Nuclaco, it is literally possible to squeeze an interpretation out of Sims' and Schwatka's words. Sims called the Nuclaco structures "houses", a designation which he seems to have reserved for the rectangular timber smokehouses first encountered by him at a Han settlement below Eagle. Thus, we can interpret Sims as identifying Nuclaco as a settlement comparable to Charley's village. We saw earlier that Schwatka also compared Charley's village to "all the native houses on this portion of the river." These include, in the middle, Klat-ol-klin, with gabled pole-constructed smokehouses. But Schwatka (1894:247) also stated that Noo-klak-o somewhat resembled the Ayan village of low brush lean-tos, Kah-tung, located near the mouth of the White River. Since Kah-tung and Klat-ol-klin were unlike, Nuclaco could not have been similar to both unless it was intermediate. Schwatka, after first having seen Kah-tung and Nuclaco, draws a contrast stating that Johnny's village was the first encountered during his journey down the Yukon "deserving the name of permanent." This leaves the question of the shelters at Nuclaco unresolved between brush lean-tos or gabled smokehouses.

8.6. ETHNIC COMPONENTS AT FORT RELIANCE

Han, visitors from other groups, white traders and miners, and probably lower and middle Yukon creoles working for the traders all lived at Fort Reliance or in the vicinity. It should be possible to recognize some of these people in the collections and features at Fort Reliance. With the type of data we have it probably is only possible to distinguish three groups: traders and their employees in one group, miners in another group, and the original occupants of the region in the third group. The traders also were part-time prospectors, but a distinction is to be made between them and miners or prospectors on the basis that the traders were permanently (albeit seasonally) based at the site, and serviced by a steamer. Thus, they could accumulate more paraphernalia, including both fragile items and heavier items, than could the very mobile prospectors. Cast iron stoves and culinary equipment, ironstone teapots and dishes, and kerosene lamps, for instance, can be attributed to the traders. Fewer items of a distinctive nature belonged to the prospectors, but metal cups and plates and light-weight kettles are likely possessions.

It appears that the semisubterranean houses were occupied by Han or Native visitors to the trading post, though this is not totally certain. Tools used in Native tanning, found with the houses and elsewhere on the site, have persisted almost to the present time and include tabular stone slab scrapers, end-of-the-bone fleshers, and beamers. The bone awls can be attributed to Native sewing. Also associated with Native occupation are the trade beads, though the situation becomes less than clear when beaded Native-made mittens, gun cases and other items are traded to the whites. To be taken into account, too, is the trader's inventory of beads. Less advanced weapons and ammunition could be attributed to the Natives; more advanced ammunition, such

as centre-fire cartridges, to the whites. The outfits of mobile Indian families could be compared, in some respects to those of prospectors, but for those who had a permanent seasonal base of operations at Nuclaco or Fort Reliance, items like ceramic tableware could have been acquired and cached when people were out on the hunt.

The occurrence of fire-cracked rock in the site and its association with ethnic components requires further consideration. It may be associated with Native cooking by the stone boiling technique, superseded by the direct use of kettles by the time Fort Reliance was established. This probably accounts for most of the fire-cracked rock dispersed over the site or found with hearth ash and sometimes calcined bone. Some fire-cracked rock may have been a byproduct of sweat baths (variously termed vapor bath, wet sweat bath, wet sauna, banya, and steam bath) taken by Natives and others. For the indigenous sweat bath, rocks are heated in a hearth, then removed to the bath hut where water is sprinkled on the rocks to produce steam (Osgood 1971:88). The evidence for this would be clusters of fire-cracked rock, tending to be larger and more irregular than boiling stones, without associated hearth refuse. The traders and their assistants probably were familiar with Russian or European style baths, used on the lower Yukon, in which the rocks are heated in the bath chamber and are not moved. Frequent bathing, though, results in a large accumulation of deteriorated rock removed from the hearth and deposited conveniently close to the bath house. The tests at Fort Reliance are inconclusive, but it remains possible that area excavations would uncover actual bath features. Tentatively, the pail and cluster of fire-cracked rock in the entryway of House 1 are proposed as bath features.

Further empirical evidence bears on the question of the ethnicity of the occupants of various structures.

- Most of the housepits can be assigned to Native occupation, but House 12 is exceptional because of the recovery of ironstone ceramics, and House 4, with its rich and varied remains, complex floor, and multiple hearths, is atypical and may have been the site of more than one occupation.

- In most cases, the material evidence recovered fails to clearly identify the cabin outlines as belonging to white miners and traders. House 8, which apparently had a sub-floor cellar, may be an exception but it was examined through only two small shovel probes that produced an inadequate artifact sample.

- The widespread distribution of hide scrapers suggests that Native camping was not restricted to the area of the semisubterranean houses at the south end of the site.

- Several unidentified objects or machinery components come from pits associated with House 7 which is in keeping with the identification of this structure as the trader's main building.

The question of the relationship between Fort Reliance and the Han settlement Nuclaco

needs further consideration as well. We cannot take it for granted that Natives at Fort Reliance were the same persons as those who lived seasonally across the Yukon River at Nuclaco, and whose ancestors were responsible for precontact sites in the region, but without information indicating otherwise that is the most economical interpretation. Others, from upriver and from the Upper Tanana area, and perhaps elsewhere, visited Fort Reliance to trade, but there is almost no information on the post clientele in documentary sources.

8.7. THE ASSOCIATION OF INDIGENOUS LITHIC INDUSTRY WITH THE HISTORIC COMPONENT

One of the objectives of fieldwork at Fort Reliance was to determine if indigenous-type flaked stone artifacts found there were coeval with the Fort Reliance trading post. In the Fort Reliance collections, the opportunity presents itself to document the last traces of stone technology as these tools were replaced by introduced materials and implements. The apparent precontact lithic component has been discussed in another section. Flaked stone artifacts also occurred, however, in association with historic components of the site: in open area test pits associated with European imports, in the fill of house depressions (which could include dirt removed from elsewhere), and on house living floors. The problem addressed here requires careful validation of provenience to demonstrate that the artifacts recovered in these contexts actually belong to the trading post period of occupation.

In open area test pits chert flakes and retouched flake scrapers frequently were found associated with trade goods, in some instances, however, mixing of material and soils of differing ages may have taken place through frost action and tree root growth. Associations in the test pits must therefore remain tentative. Similarly, for the house fills, older deposits containing precontact artifacts may have been dug up to bank the walls and cover the roof, and when the houses collapsed these items came to overlie younger ones deposited on the house floors (called "reverse stratigraphy"). The house floors themselves, however, appear to be valid uncontaminated contexts. The few unmodified chert flakes and the small number of retouched flakes found in the house floors are thought to be historic artifacts contemporary with the houses and trading post.

None of these items by its morphology is likely to be part of a gun flint or fire flint which are European flint artifacts; the sample of modified lithics from the house floors is composed primarily of simple scrapers. Formally distinct tools of the precontact culture such as projectile points, drills, knives and gouges are absent from this later context. Any arrows still used at this date probably had iron and bone tips. Hideworking tools also are common in historic contexts at Fort Reliance. Numerous hide processing tools, particularly scraping stone slabs, commonly termed tci-thos by archaeologists, were recovered at Fort Reliance. In Northwestern North America Native stone and bone hide-working implements, and concomitant tanning procedures, persisted long after other tools had been replaced with manufactured imports. All types of scraping tools, not only those for processing skins, appear to be among the last stone items to be

replaced by new materials. When replacement did occur, it often was only the working edge and not the haft that was replaced by new materials. Otherwise, the newcomers did not have feasible local alternatives for the Native techniques. For working other material, where a hard shaving edge was required, one of chert might have served better than a softer one of metal. The unformalized Fort Reliance chert scrapers of the 1870s and probably early 1880s were the twilight of Han flaked stone technology.

CHAPTER 9: FUTURE RESEARCH

The goal of the archaeological investigation was not to produce a definitive monograph on Fort Reliance but to determine the nature and extent of remains there so that substantive research questions could be defined and work planned appropriately in the event that major excavations are undertaken there at some future date. Approximately 97 percent of the site and roughly 80 percent of the house floor area remain unexcavated, but some direction can be taken the results of the present examination.

9.1. PROBLEMS FOR RESEARCH

Research at Fort Reliance potentially may bear on a number of anthropological and historical questions which specifically address some aspect of Native or Euro-Canadian history for which information is lacking at a level of detail commensurate with present or potential interest in the topic. I also refer to the need for information for practical purposes such as protection and conservation of the site, and for site interpretation and possibly reconstruction. All the research suggested below would draw on information from a single set of excavation data, though supporting research undertaken off the site or outside the context of excavation would vary depending on the problem under consideration.

Archaeological Comparison of Alaska Commercial Company (American) and Hudson's Bay Company (British/ Canadian) Trading Posts

This problem requires than a Hudson's Bay Company trading post comparable in age to Fort Reliance also be studied. One such post was at (old) Rampart House, located near the International Boundary in Alaska. Hypotheses to be tested would take into account the fact that the two companies drew goods from differing sources.

The Interface of Han Recent History and Late Precontact History

There are two problems or two interpretive foci towards which examination of the data can be directed. Little historical ethnography was recorded for the Han until the end of the 19th century, and later anthropological ethnography is relatively sparse although Osgood (1971) has drawn all the fragments into a single volume. Han ethnographic collections also are meagre. Given this situation, the 1870s-1880s archaeology at Fort Reliance may contribute to the knowledge of traditional Han lifeways and provide a material record of their past.

The 1870s-1880s or the Fort Reliance period is the latest period during which the Han may

be traced in the archaeological record. Here begins Han prehistory, as one looks backward in time through the decades of overlapping history and prehistory (in the European sense of written records). Further archaeological excavations would determine the features of the end of prehistory peculiar to this area and commonalities held with other peoples at that time.

Conditions and Quality of Life at the Trading Post

Accounts of Fort Reliance (McQuesten 1905, 1952) and those generally pertaining to the early Yukon drainage recount events but are extremely sparse in details. In but a few cases it is unknown what tools were kept at the post, what kinds of domestic utensils were in use, what kinds of firearms they had, how they butchered game, what they used for light, how they heated and much else. Assumptions may be made on the basis of the available technology of the times, but this would have been filtered through personal preferences, scavenging and hoarding, and through the Alaska Commercial Company purchasing department in San Francisco and their consignments to the St. Michael supply point. Moreover, most of the Yukon traders were married to or looked after by local women. But again there is little recorded detail on the activities of the women, usually of Koyukon-Russian ancestry, whose lives were joined with those of the traders. A look at the refuse around the traders' homes can provide material clues to life at the post.

Overwintering of Miners and Prospectors at Fort Reliance

Rectangular structure outlines at Fort Reliance interpreted to be cabins are attributed to Euro-Americans. There are more than enough of these features to account for the small buildings which were part of the trading post; therefore, we may assume some had been built by early prospectors working in the Yukon drainage. This assumption needs to be tested and one might assume that given sufficient investigation, elements of the assemblage distinguishing miners from the traders will be recognized. A further problem is to determine whether any of the miners', prospectors' and traders' cabins were reoccupied by natives after the miners had left this locality, though there are published reports that the buildings soon were torn down for firewood. The distribution and density of beads may be pertinent to this analysis. That distribution shows that there is not a clean difference from the north end of the site, where the cabin outlines are located, and the south end where the semisubterranean house pits are located. There are a number of possible explanations for that, but their discussion now likely would be inconclusive because the small extent of the excavated sample.

Post-Abandonment Use of the Site

More needs to be determined about the history of the site after it was generally abandoned in 1886. To some extent, this could be determined through careful excavation of the turf zone. Additionally, local oral tradition may play a key role in documenting the later use of the site.

9.2 THE POTENTIAL OF THE SITE FOR HERITAGE APPRECIATION

Early trading post sites are not common in the Yukon drainage. Fort Reliance, two locations of Fort Selkirk, and the Frances Lake post (not strictly in the Yukon drainage) are examples for which there is archaeological verification. Other pre-gold rush posts reported in contemporary literature include Pelly Banks, the posts at Eagle, especially Belle Isle, old Rampart House, Fort Yukon, the cluster of trading posts located in Alaska at the mouth of the Tozitna River and across from the mouth of the Tanana River, a short-lived post on the Tanana River, and Nulato. However, most of the latter group lack archaeological verification, or are known to have been destroyed by river erosion as is the case for Fort Yukon, or have been continuously occupied to the present time and are highly disturbed. Intact, well-delimited trading post sites thus are uncommon. Given the spread between their dates of operation, the wide geographical differences in their location, and the fact that they are divided between two or three trade networks (Russian American Company, HBC, ACCo) which offered differing goods, each site is a unique and irreplaceable historical resource.

Fort Reliance holds general interest value as a trading post site as a result of a number of factors unique to its history:

- It is of particular interest as an "intrusive" outpost of a trading network centered in Alaska with a California home base.
- The location also was a pre-Gold Rush Han Indian settlement and has a unique and somewhat enigmatic set of semisubterranean houses.
- Fort Reliance is of major importance and interest because of its role in opening the Yukon to prospecting and mining that eventually led to the Klondike discovery. The pioneer traders and prospectors McQuesten, Harper, Mayo and sometimes Ladue were based there. It was the primary focal point for what Wright (1976) termed the "Prelude to Bonanza."
- The site is relatively intact, having suffered only modestly from erosion and later use, and thus far only moderately from vandalism.
- Traces survive of the original structures, and perhaps of all structures ever built there. The ground lies as it was trod by traders, prospectors, itinerant explorers and Natives 120 years ago, unaffronted by pavement and road fills.

To name a single location as the venue for lives that were lived over thousands of square miles of creeks prospected, rivers fished and territories hunted is at best a simplified approach. But the site embodies one of the few concentrations of physical evidence for this period of the history in the Yukon. Fort Reliance should be conserved and protected so that McQuesten, Katzah and other fathers of the Yukon may become tangible realities.

APPENDIX I: COLLECTION DESCRIPTION AND ANALYSIS

AI.1. GENERAL REMARKS AND CLASSIFICATION

This Appendix describes the objects collected, mainly from the excavations, with the exception of the beads which appear in Appendix II.

The following information is presented at high level of detail so that the results of the 1983 and 1991 work can be integrated with any future recovery from Fort Reliance without, I hope, the necessity for other investigators to reanalyse the collection. Catalogue numbers are cited extensively in order to permit easy recall of specimens that might not be identified readily on the basis of their description. If not given in the text, these numbers appear in the keys to the plates. Excepted from this attention are well populated classes such as nails and clay pipe fragments. I had anticipated providing artifact distribution plots, but realized that the plots for a scattered series of small excavation units would be of little value here. If ever it is needed, point provenience information can be extracted from the catalogue. Artifact provenience in terms of House or test pit can be determined by reference to the following numeric list. Inasmuch as there was more than one period of occupation at the site, level or layer provenience is considered to be especially pertinent. This information is given frequently in the text, in summary statements, in tables, or in the keys to the plates. The artifacts are listed in Table AI.4 according to the excavation unit from which they were recovered.

LaVk-1 ARTIFACT PROVENIENCE BY CATALOG NUMBER AND EXCAVATION

1-72	Pre-1983 collection	1013-1023	TP D
73-74	Surface near House 1	1024-1041	TP E
75-151	House 1	1042-1054	TP F
152-286	House 2	1055-1085	TP G
287-359	House 3	1086-1106	TP H
360-597	House 4	1107-1127	TP J
598-607	House 5	1128-1205	TP K
608-631	House 6	1206-1216	TP L
632-686	House 7	1217-1263	TP M
688-714	House 9	1265-1293	TP 0
715-778	House 10	1294-1374	Pit 3
779-846	House 12 fill	1375-1394	Pit 4
847-863	House 12 floor	1395-1446	Surface, bank
864-907	House 12 fill	1447-1476	Surface, site
908-917	House 12 floor	1478-1480	Surface, bank
918-938	House 12 fill	1481-1483	Surface, site
939-946	House 12 floor	1484-1526	House 1
947-949	Old TP	1527-1538	TP Q
950-986	TP A	1539-1547	TP P Flag Pole
987-996	TP B	1548-1562	House 1 back wall
997-1012	TP C	1563-1595	House 1 entry

Most of the category designations or type names are self explanatory. The basis for the organization can classificatory scheme used here has been discussed in Chapter 5.

AI.2. ITEMS OF THE NATIVE CULTURE MANUFACTURED LOCALLY

Artifacts of this category are made from locally-available stone and bone and less often from imported fine cherts and obsidian and copper. Their primary characteristic, though, is that they were developed in the context of Native American cultures and are not associated with the white culture. The implements recovered at Fort Reliance are stylistically compatible with a late precontact and contact period date, but most are sufficiently generalized that they could date within a relatively broad time range. Some, though, were recovered from house floors, a context that gives a reasonable guarantee of postcontact age, while the remainder were recovered from a shallow depth again indicative of relative recency.

AI.2.1. Stone Implements

The stone implements are obvious candidates for the continuity of an ancient indigenous technology; some in fact come from the postcontact Fort Reliance (1874-1886) period while others were dropped at the site some time earlier.

Flakes and Shatter. Cherts, varying from fine to fractious quality, and less commonly quartzite and obsidian make up the 262 flakes and pieces of shatter in the collection. Usually where flakes occurred in a cluster more than one lithology is present, with lower grade material predominating. Several core chunks also were recovered (Pl. 3 n-p, s). These are either cores for flakes, which in turn were made into tools, or pieces intended for further reduction to make formalized tools. River-rolled cobble cortex is common. The core chunks are simply these river chert pebbles split and somewhat trimmed or utilized for the production of flakes. The most common source for lithic material, other than schist slabs utilized for hide scrapers, was the nearby banks of the Yukon.

End Scrapers and other Bevelled and Utilized Flakes (Scrapers) (Pl. 3). The scrapers are divided into two groups: those with pronounced, intentionally formed, flaked bevels and those with light retouch of the edges which may have arisen simply through utilization of the unshaped flake. The scraper collection is described in Table A.1, with especial attention to provenience as this implement group indicates both precontact occupation and technological continuity into later periods. Where information is available, depth of the artifacts below surface is indicated as "dbs."

The end scrapers, bevelled flake scrapers and utilized flakes occur in a variety of contexts including fills or displaced contexts, contact period floors and relatively deeper soil contexts suggestive of a precontact age. Similar items occur widely among North American cultures and are to be expected to be well represented in the Yukon.

TABLE AI.1. FLAKED SCRAPERS

End Scrapers and Bevelled Flakes

Number	Description	Provenience
24	Typical end scraper, thin, grey chert (Pl. 3k)	Old excavation
1258	Typical end scraper, black chert (Pl. 3i)	TP M
353	Variant end scraper, edges and faces bifaced, edges crushed (Pl. 3j)	Floor layer, postcontact
974	End scraper fragment?, thick bevelled flake, obsidian (Pl. 3l)	TP A 10 cm dbs with other lithics, postcontact
1014	Hafted (side?) scraper, thick bevelled flake 35x19(edge to back); thick unretouched edge at one end is ground, very roughly bifaced prior to irregular bevelling, portion of edge also smoothed, unimpressive but technologically interesting, black chert (Pl. 3h)	TP D, ash & below with other lithics, precontact
1036	Very-thin-edged scraper, with format of end scraper (Pl. 3g)	TP E, 10 cm dbs, lithics & historic trade goods associated
529	Bevelled flake, small, fine chert, steeply bevelled end broken, other bevelling may be use retouch, 35 mm long (Pl. 3d)	H 4 WTP, just under sod (fill above occupation layer?)

Utilized Flakes

Number	Description	
473	Notch; 73-mm-long chert flake with triang. cross-section, heavily utilized or altered to produce 26-mm notch; half of opposite edge has ventral crushing or battering (Pl. 3a)	House 4, main occupation layer at base of floor
591	Worn-battered edge, fragment too tiny for more to be said, high quality chert	H4, below main organic layer 28 cm dbs.
970	The thin distal tip of a small, 21 mm-long flake may have been utilized, as for graving but that the traces so interpreted may be damage unrelated to use	TP A, 10 to 20 cm, assoc. with other lithics and almost no historic trade goods
976	Obsidian flake, 43 mm long, edges finely nibbled probably from utilization (Pl. 3b)	TP A, same context as 970
979	Obsidian flake, 28 mm long, bifacial retouch along one undulating edge, other retouch probably is incidental damage (Pl. 3e)	TP A, 10 to 20 cm at top of brown soil
980	Obsidian flake, 38 mm long, very fine ventral retouch along thin straight edge (Pl.3c)	TP A, same context as 979

1017	Chert flake, 28 mm long, variously and irregularly nicked and bevelled, suggesting both utilization and natural damage	TP D, from flakes found in or under ash, in deep context
1261	Chert flake, 31 mm long, extremely fine very regular retouch extends along sharp edge	Flake lot 1259, TP M, lower brown soil with other lithics under trade goods.
1262	Chert flake, 30 mm broad, extremely fine dorsal retouch along part of curved edge	Same as 1261

Tabular Hide Scrapers (Pl. 2). These stone slab implements, also termed tabular bifaces tci-thos or chithos, are a well known artifact used in the Western Subarctic and in parts of the Arctic region for processing caribou, moose and other large mammal hides. They help dry the hide and impart a suede-like surface during an advanced stage of the tanning processes. The typical or classic format has a straight back and curved edge that extends upward at each end to meet the back. Flaking, and in particular bifaciality, is limited to the retouch and blunting at the edge which was produced mainly through battering (Rainey 1939). This implement is made on tabular sheets of rock, though in some regions equivalent tools were made from boulder spalls and large blunted semilunar ulu knives. All from Fort Reliance all are made from relatively uniform sheets of schist. As is customary for this implement, there is considerable variation in size (Table AI.2).

Biface (Pl. 3q). The roughly fashioned, leaf-shaped biface is better formed than the impression formed on first sight. The low grade of stone utilized contributes to a low impression of this item. The specimen is 75 mm long, 41 mm wide, more excurvate along one edge than the other, thin and moderately pointed at one end, uneven or damaged at the other unpointed end. Glass beads, cut nails, ceramics, and other metal artifacts also were recovered from the House 10 test, mostly from a hearth layer or humic facies whereas the biface was recovered from red sand at the base of the hearth. Thus, the hearth association may be incidental and the European artifacts may be more recent than the biface. This tool type is one likely to be replaced by metal-bladed knives early in the contact period. This type of implement is widely distributed.

Square-Stemmed Projectile Point (Pl. 3f, 1123). The point, made of good quality grey chert, is well formed as far as symmetry and sharp tipping are involved, but the edges are thick and on each face there are unretouched areas left from the flake blank. It measures 51 x 23.7 x 6.7 mm, though the very base of the stem appears to be missing. The shoulders slope to the 15-mm-wide square stem. It was found 11 cm deep at the bottom of reddish soil overlain by turf and by humic and sandy soil layers, and can be attributed to an earlier historic (pre-Reliance) or precontact occupation. The format of this point is not especially diagnostic but fits well a temporal placement within the last three millennia.

TABLE AI.2. TABULAR SCRAPERS AND RELATED TOOLS

No.	Dimensions (mm*)	Remarks	Provenience
Tabular Scrapers			
151		Tiny edge fragment	H 1 fill or floor
283	100x65x9	Typical format (Pl. 2a)	H 2 floor
398	68+x55x7	Incomplete	H 4 turf
588		Fragment, trace of edge	H 4 main occupation
777		Fragment	H 10 Hearth-humic
827	80x47	Schist shingle or chitho Rough surface, artifact status uncertain, damaged	H 12 soil fill below turf
859	82x47x3.7	Straight back, thin	H 12 8 cm above floor
896	85+x94x8	Classic format, half only	H 12 lower brown soil
935	86++x96x9	Incomplete, half (Pl. 2d)	H 12 Lower turf
1335	129x94x16	Crude, wavy cleavage, reject?	Pit 3 Upper lot
1392	85+x65x6.7	Slightly incomplete	Pit 4 bottom
1525	small	Schist, fragmented	H 1 corner TP
1557	--x85+x--	Schist, fragment	H 1 back wall
1558	135x74xto 14	Schist, elongate, thick edge	H 1 back wall
1559	89x62x5.7	Schist tablet (Pl. 2b)	H 1 back wall
8pcs	small to large fragments	Tabular chips from making or breakage of chithos	H 1 floor & back wall, H 10, H 2 turf or fill, H 2 floor,
Bifaced cobble			
587	126x110x38	Thick flat cobble, approx. 50% and 35% of cortex removed from each face respectively through coarse bifacial retouch. Edges thick (Pl. 2f)	H 4 main occupation
Boulder spall			
957	103x90	Edge lightly retouched and blunted from use (Pl. 2e)	TP A Top 10 cm
1556	128x105	Edge finely retouch, trace of wear, classic form, quartzite (Pl. 2c)	H 1 back wall

*L x W x T. "+"indicates that the dimension given is only partial because of breakage.

Whetstone (Pl. 3t, 1253). A bar-shaped whetstone, rectangular in cross-section, is worn smooth and flat on three sides and over the angled intact end, while the fourth side is less regular but also is partially flattened through use. One end of the 63 x 20 x 19.8 mm specimen is missing. The material is a well indurated sandstone or greywacke. It was found almost at the surface with a dense scatter of glass beads and evidently belongs to the postcontact period unless it was forced to the surface from older levels by frost action. Simple implements of this type occur widely.

Pecked Stone Fragment (Pl. 3r). Flake 1434, found on the river bank, is derived from a large pecked stone implement. The manufacturing technique, greywacke lithology and size, especially width, suggest that the fragment is derived from a splitting adze, an artifact that occurs widely in late-precontact sites of the Yukon drainage (for examples of complete adze see MacNeish 1964 Fig. 95-11 and Morlan 1973: Pl. 24).

Pebbles and Cobbles. The pebbles are not artifacts, but given the natural characteristics of the silty ground at Fort Reliance, they must have been brought into the site with some degree of deliberate intent. There are three stones or small cobbles larger than 60 mm. The other 67 are in the pebble size range and present a heterogenous lot in terms of size, shape, degree of rounding and lithology. No matched groups of same size or shape were recovered. The sample is distributed by length as follows:

Length	15	20	25	30	35	40	45	50	55	60	65+	
Number		8	5	15	11	10	6	3	5	3		2

Several cobbles, not hearth stones or fire-cracked rocks, were observed but were not collected (15-cm-long cobble H 4 below floor level; 17 cm by 17 cm cobble, no traces of use, H 4; flat cobble 22 by 18 cm TP Q just under the turf, no traces of use, as an anvil for instance). Relatively few cobbles were found exposed on the surface with the exception of a camp hearth located near House 6 that dates not many years before 1983, but there was one next to House 8 and a stone slab atop the berm at House 4. Some very large cobbles also were found in House 1, two of them in the entry passage.

Pebble provenience includes the floors of semisubterranean houses, indicating especially an association with the indigenous complement of the Fort Reliance occupation. Some also were found in the turf and fill above the house floors.

AI.2.2. Artifacts of Bone

Bilaterally Barbed Arrowhead (Pl. 1d). The bone (or antler) arrowhead is broken at the tip end, thus it cannot be determined whether it was self-armed or had an inserted tip. The base also is damaged but enough of it remains to show that there was a conical tang with sloping shoulders at the body. The extant portion is 119 mm long, and the complete point at least 135 mm long. The shaft is lozenge-shaped (lenticular) in cross section.

TABLE AI.3. PROVENIENCE OF LITHIC ARTIFACTS

Artifact Class	Provenience Type*				
	Problematic	Fill	Floor	Deep Soil	Shallow
Bevelled & utilized flake scrapers	2	1	2	9	
Whetstone					1
Projectile point				1	
Pebbles	Rare	Many	Many		
Tabular scrapers	5	5	6		2
Bifaced cobble			1		
Boulder spall	1				1
Biface			1 - or - 1		

* The Floor and Shallow contexts are mainly postcontact, the fill may be both contact and postcontact, while the deep soil is largely precontact (prehistoric). Fill occurs above the structure floors and consists of displaced material from deposits of various ages. The turf above contact period house floors also is classified as fill. Floor refers to the well defined floors of the five depressed structures of the Fort Reliance period. Deep soil refers to a position relatively deep within the sequence of turf and soil outside the building or house structures and probably delineates a precontact context. Shallow, including also turf, is the opposite of deep for open areas, and artifacts recovered from this context usually are trade goods.

A row of low, finely cut barbs runs along each edge. The rows of barbs are outlined by fine cut lines, which is a feature very widespread in northwestern North America and probably used to guide preparation of the barbs. The barbs on one side are long and single, those on the other side double in pairs separated by a long ramp or unbarbed reach. They appear to have been cut by an iron tool, which helps to place this specimen in time. Its provenience is part of the fill sequence in the House 12 depression and it could have been redeposited from an earlier context. Use of iron tools to carve the barbs, if correctly identified, nevertheless, sets the timeframe within the 19th century.

No close counterpart to this point is seen in arrowheads from the southern Yukon nor are there any in the substantial northern Yukon collections reported by Le Blanc (1984) and Morlan (1973). However, it compares closely with specimens from the Upper Tanana site of Dixthada, located in Alaska and dated to the late precontact or contact period (Shinkwin 1979: Fig. 30 A,D). This comparison is reinforced by reports that Upper Tanana people visited Fort Reliance in the 1880s. An unfinished point from the contiguous Atna area of Paxson Lake in the Copper River Basin of Alaska appears to be of the same format (Ketz 1983: Pl. 4 d).

Awls (3)(Pl. 1 a-b, e). A fine example of a moose splint-bone awl was recovered from the floor of House 1. This complete 169-mm-long awl is carved and whittled over most of its length. The

87-mm-long tip fragment of another awl was recovered from the same context. It probably was identical to the preceding specimen. Both are shaved and whittled by a tool that has left long very narrow linear facets and striations along the shaft. Across the facets on the complete specimen there are closely spaced chatter marks and more subdued ogives left by the cutting tool, as described by Morlan (1973:274-275). In some instances, closely-spaced chatter marks may be confused with file striations. The moose splint bone was recognized as being ideally suited for awls.

The third awl (1553) also is a 73-mm-long tip fragment. Its form is like the preceding awls but it is slightly more robust. This reflects use of a different bone element or antler for the blank.

Decorated Tube (Pl. 1f). A tube fragment 17 mm in diameter and originally more than 43 mm long is flanged at the largely intact end. It is made from compacta (dense outer bone), probably from a section of a large bird bone. Part of a large-scale crosshatched pattern of fine intersecting diagonal lines is present. Smoothing of the edge along part of the break is difficult to explain. This specimen compares closely with the drinking tube from a postcontact component in the southern Yukon illustrated by Workman (1978: Pl. 6B). The House 4 provenience probably can be assigned to the Fort Reliance occupation (1874-1886).

End of Bone Flesher (Pl. 1c). This implement is made from a split metapodial or other long bone. It measures 116 by 33 mm but is incomplete and was originally longer. The tip or working end is badly weathered, but the shape of this object, including especially its gradual taper from more than 11.5 mm thickness to less than 5 mm near the tip, conforms with expectations for the assigned identification. After it had been split, the blank was flaked and whittled to shape. Similar tools of this type are common in the north and are identified as fleshers for removing fascia from hides, or as skinning tools for removing hides from carcases (Morlan 1972: Pl 1D, 4G).

The provenience in the fill of the House 2 entry leaves its temporal assignment open interpretation. It could have entered this context after the house was abandoned and the entry was caving, or it could have been present on the ground prior to the construction of the Reliance-period house and subsequently incorporated in material used to cover the entry. The earlier age may be suggested on the basis of the condition of the specimen.

Lurehook Body (Pl. 1g). This item is a 27-mm-long, 12-mm-wide oval to slug-shaped, slightly arched, plano-convex piece. It has drilled perforations of unequal size at each end. The untapered holes are not gouged and were produced by apparently modern techniques. The surface is not finely finished and is made up of striated facets left from carving and whittling the ivory or bone compacta. This displaced riverbank find fits the trading post occupation.

Comparable items are not reported for the northwestern interior region but can be found in the range of Eskimo lurehooks from the vicinity of Bering Strait (cf. VanStone 1980: Pl. 11), though most lurehooks are larger and are tapered at one end. One from Unalakleet (Norton

Sound) shaped almost identically to the present specimen and precisely the same size, was collected by Nelson about 1880. It is identified as a grayling hook (Fitzhugh and Kaplin 1982: Fig 84). The Fort Reliance hook body undoubtedly is an import from St. Michael, brought up with the traders' supplies or as personal paraphernalia. The body of the lure hook, used mainly for jigging, is both as a weight and lure. A barb is inserted into a hole at one end, the line is attached through at the other end.

Utilized Bone Chip. There is one bone chip chisel or wedge (842). This piece is heavily impacted at the larger butt end--i.e., pounded and battered. Impact or battering crushed the grain of the bone and detached tiny chips from the edges.

AI.2.3. Artifacts of Bark

Birchbark and other bark, including aspen, was used by Athapaskans for construction, containers and other implements. Twenty occurrences of bark were recorded, including the sheets left in place in Houses 1 and 3. Of the 18 specimens collected, 11 show cut marks (1 also has sewing holes) and one is a container. The one with sewing holes is double: the edge of one piece, bearing a single row of holes, had been lashed to another strip of bark bearing a double row of stitching holes as is found with the blanket stitch (Pl. 10i). The assembly defines a narrow strip of bark, not identified functionally, broken at each end but bounded along the sides by cuts.

The small container or **snuff box** from the floor of House 3 (Pl. 11e, LaVk-1:292) is of especial interest. The 80 by 58 (high) by 18 mm oval container has a separate wood base and probably also had a separate inserted wooden cap or top that was not recovered. One side is plain; on the other side tongues of bark--3 from one direction and 2 from the opposite--insert under edges cut into the bark, the whole design forming a rectangle outlined by paired vertical incised lines.

Similar objects have been collected from the Eskimos of the Bering Sea coast. Oswalt recovered a specimen of the same type, but with different decorative pattern from Kolmakovskiy on the Kuskokwim River a short distance upriver from the Athapaskan-Eskimo interface (Oswalt 1980). Some Bering Sea specimens (below) have snuffing tubes attached, but Oswalt suggests that the Kolmakovskiy example was for chewing tobacco. At Kushunuk, in Eskimo territory on the Lower Yukon River, Nelson collected a patterned birch bark snuff box that is nearly identical to the present specimen (Nelson 1983 Pl. LXXXVI). Variations of the type are represented in other collections from the Bering Sea Region (cf. Thiry and Thiry 1977: P 92). Probably, this specimen came from that region, brought up river by the traders during one of their resupply trips. The practice of chewing tobacco mixed with ash (sometimes referred to as chewing "snuff"--cf. McClellan 1975a:203) may have spread from Eskimos to the interior Indians of the Yukon drainage, though by the time Fort Reliance was occupied the Han Indians would have been in contact with other tobacco users and would have had access to tobacco through trade from various sources. In the southern Yukon McClellan reported seeing one "old time" tobacco container, for

a mixture of tobacco and ash, among the Inland Tlingit, but made of brass in a different format than the present specimen (McClellan 1975a:295).

Considering the extensive amount of bark that may have been cycled through the settlement, and possibly fabricated there, recovery of 20 specimens, almost all fragments, is low. Possibly the facility of dried birchbark for starting fires led to recycling unwanted bark into the hearths. The floors of semisubterranean Houses 1, 2 and 3 and House 4 and two excavations associated with the main cabin, House 7, are represented in the bark collection.

AI.2.4 Copper Artifact

This item of beaten native copper was found at the site by Jeff Hunston. It was expended for an analysis of native copper technology (Franklin, Badone, Gotthardt and Yorga 1981; there noted in error as from Fort Resolution). Hunston states that the small piece measured 26 mm by 4.5 mm by 3.5 mm and that it showed evidence of being hammered to shape as well as some polishing at one end. He interpreted it as a tool (Hunston 1975).

AI.3. IMPORTED EUROPEAN MANUFACTURES

AI.3.1 Firearms Complex

In Alaska, and probably also the western Yukon, the one pound powder can or flask indicates the arrival of American traders in 1869. This item does not appear to have been traded by the Hudson's Bay Company at Fort Yukon. The United States purchased Alaska in 1867, but the Russian traders at Nulato did not leave until the next year. Some Russian trading posts were reopened by the Americans and other, new, posts were established. In 1869 the Hudson's Bay Company vacated Fort Yukon (Raymond 1900), but the American company started trading there. These commercial changes undoubtedly also brought new weapons into the Yukon valley trade.

Regarding firearms used by the Han and Tanana Indians at Nuclaco, opposite Fort Reliance in 1883, Schwatka states:

> The gun used by them is the double-barrelled shotgun, spoken of before [small calibre, takes either shot or ball], and most of the men have from one to three of these while some are provided with Henry rifles, although there are very few of these. They are poorly supplied with ammunition...(Schwatka 1900:340).

Artifacts from Fort Reliance represent the use of muzzle loading weapons (balls), the Henry rifle (.44 cal. rim-fire cartridge with double pin impression), and relatively modern centre-fire rifles and shotguns. Most cartridge cases of the last group, found on the site in the sod, undoubtedly postdate Fort Reliance. The 30-06 rifle, for instance, was introduced at Circle, located between Fort Yukon and Fort Reliance, in 1895 soon after it was developed (McQuesten

1905). The 44 Henry repeater and muzzle-loading guns overlapped, and use of muzzle loaders as shot guns continued long after breech-loading rifles had become available. No gun flints were found at Fort Reliance, though at Fort Yukon the Hudson's Bay Company traded flintlocks to the exclusion of cap locks. McQuesten recalls that he saw his first repeating rifle in 1872 at Fort Yukon. This could have been a centre-fire rifle, but more likely was the old 44 Henry, or the improved post-Civil War model of Henry repeater, produced from 1867 to 1875, which had become available through traders in western Alaska. During most of the 1870s and 1880s, though, northern settlers would have sought the Winchester Model 1873 and other models of early centre-fire rifles. These arms continued in use during later decades alongside modern additions such as the high-powered 30.06.

Trigger Guard (Pl. 4o). The major portion of an iron trigger guard, bent and broken at one of the attaching screw holes and also broken at the opposite end, was recovered from the sod layer. It evidently is from a very cheap gun, probably muzzle-loader.

Powder Cans (Pl. 5a-f). Powder cans (flasks) with top removed, separated bases and tops (without neck and cap), and sides were recovered. These pieces represent the complete recycling of one pound powder cans or flasks for use as containers or as raw material. Two sizes or formats are present, though both could have had the same capacity. The more common (smaller) one found at Fort Reliance also is the format most commonly represented in Alaskan sites. Their provenience includes the surface, turf, semisubterranean house floors and other Reliance period contexts.

Container (Pl. 5f), powder flask lacking top, probably used secondarily as a container, red coloured. The base of this can bears the muted words PAT 1--- (none of this is clear). 94 mm side-to-side, c 30 mm thick front to back (distorted), 101 mm high without the top.

Powder flask (854) lacking top. Heavy encrustation impedes recognition of any inscription on the base.

Powder flask top (Pl. 5a), large format 105 x 40.7 mm front to back.

Powder flask top (Pl. 5b, 155, 373, 430, 768, 1250, 1390, 1542); standard format 96.6 side to side x 34 mm front to back, one fragment has trace of black paint; 1390 is pounded in at ends and flattened on the sides as if intended for an implement. All powder can tops lack caps and spouts, usually made of lead, which evidently were removed and recycled, probably melted to make ball and shot.

Powder flask base (half and complete), wide format (see top in Pl. 5a) (1079, 1587), black paint on one example.

Rectangles 101 mm wide (from powder cans) including complete sides of powder cans. Most

specimens show folded seams an attribute that with their width indicates derivation from the sides of powder cans (Pl. 5c-d, 73, 206, 470, 526, 906) 101 x 117, 101/102 x ≤215 if sides were unfolded, 101 x 61/71, 101 x 76); No. 206 appears to have been refolded inasmuch as the inside seam is on the outside; also No. 162, 95 x 180 mm, which appears to be side of powder can incomplete along one edge, hence falls short of 101 mm width.

Canisters impressed "PATD 1859" are identified as Eagle Gun-powder -- Dutch Shooting #2 Brand, marketed by the DuPont Company. The date refers to the patent of the container which probably was used until the 1880s (J. Twillinghast, Marlow N.H. letter to CMC researcher D.G. Rider). The significance of a minor difference in cans from a Koyukuk River setting contemporary with Fort Reliance ("PAT." instead of "PATD") has not been determined. Such cans are similar to Hazard cans, but the latter lack the stamping. Powder cans of similar format were recovered from the west Alaskan sites of Crow Village, Tikchik, Akulivukchuk, Kijik and Nushagak as well at Fort Reliance in the Yukon. More than one size or variety was recovered at Kolmakovskiy (Oswalt 1980:125), and it is apparent from Oswalt's measurements (Appendix I:125) that these include the two sizes recovered at Fort Reliance. None of these, however, bears the date stamp, although extreme rusting may obscure details. The oblong shape was considered suitable for pocket use and was available in nearly identical form or slight variations from several manufacturers.

Lead (Pl. 4j). Lead may have been utilized locally for home-made shot and balls. With this potential use in mind, the 12 catalog entries for 16 lead "dribbles", pellets (not shot) and drops and crumpled foil were examined. Five occurrences (in 4 lots) of crumpled lead foil may represent material saved, usually in wads but also in smaller pieces, for potential recycling (678, 1305, 1331, 1362). Four flat pieces may have come from contexts where molten lead as it was spilt consolidated on a smooth flat surface (118, 893, 269, 679). There also are three dribbles or aggregates of dribbles (119, 1304, 1330). Pieces of charcoal are imbedded in two of them. One dribble consists of a five pieces found in proximity. The dribbles are too large to be only material lost over the spout during pouring and casting, or lead from the seams of soldered cans that had been in a hearth. In sum, there is nothing in the 16 specimens that conclusively indicates the recycling of lead, although that probably is the case, or to suggest home production of ball for muzzle loaders.

All but six specimens were found in Pit 3, which contains discard from the large cabin No. 7, much of it evidently cleaned out of a stove (and two of the remaining six were found inside H7); thus the melting of lead stems to a large degree from an activity of the traders. Only four small specimens come from the semisubterranean house floors.

Musket Ball and Shot (Pl. 4). Two finished musket balls (303, 990) are 14.3 and 14.2 mm (.548-.557 in.) in diameter (Pl. 4i). Elsewhere, especially in Alaskan sites, 15 mm is the most common size although 9, 10, and 18 mm musket balls also have been recovered. There is one buckshot pellet (5.4 mm, Size 8) (Pl. 4h). Dropshot measuring 3.3, 3.5 and 4.1 mm in diameter was

cataloged in six provenience lots of 1 to 18 pellets each (117, 178, 298, 346, 1180, Pl. 4g). Most obviously are of lead, but some appear to be hardened. Pellets were found on the floors of three semisubterranean houses, and probably had been employed in muzzle loaders charged with shot. The remainder were recovered outside the structures.

Percussion Cap (primer). The used, centre-fire cap, is 5.5 mm in diameter and 2.3 mm high. This variety cap has a relatively massive metal bar or anvil across the interior. The size does not match any anvil type primer listed in modern catalogs, but use and corrosion may have distorted the dimensions. This is approximately a No. 2 size. In regard to identifying the primer, those illustrated in the 1894-95 Montgomery Ward catalog are of different types, while the 1908 Sears Roebuck & Co catalog (reprint) notes that there existed, by that time, over 50 varieties of primers.

Cap Can (Pl. 4p). One complete cap can base, with sides split into segments, and two segments from the sides of different cans (320, 1246) were recovered from the semisubterranean houses.

Cartridge Cases (Pl. 4). Cartridge cases include two .44 calibre rimfire cases, an early type, and a limited range of centre-fire rifle and shotgun cartridge cases, most of which are late.

.44 x2, raised H headstamp, 0.90 and 0.875 inch long inclusive of cap end, double firing pin impression (Pl. 4f, 604, 1104; the type is associated with the Fort Reliance period).

.22 Special for Winchester Model 1890 rimfire x2 (Pl. 4e, 984, 1113), 0.955 inch long, recessed U and recessed H headstamps, the first is fresh appearing though it is not from a shallow context and is associated with early artifacts).

.44 or .45 cal, not identified, centrefire, up to .48 cal (diameter of case next to head)., straight case 1.3 inch total length, head dia. .525 inch, headstamp absent?, (Pl. 4c, Reliance period).

.303 Headstamp 303 BRITISH IMPERIAL (1423 river bank)

30-06 Headstamp: W.R.A. Co. .30 ARMY (Pl. 4a, 953a, 953c)

30-30 Headstamp: 30-30 DOMINION (Pl. 4b, 953b, fresh appearing); Headstamp: 30-30 D.C. Co. (1424, 1424a, 924a, Pl. 4b); Headstamp: 30-30 REM-UMC (924b); Headstamp: 30 W.C.F. W.R.A. CO (989) x5 fresh white metal primers

Unidentified, head removed, width of flattened case suggests approx. .3 cal, case length approx. 1.9 inch. (Pl. 4d, 839, H12 fill below 13 cm may date to Gold Rush period).

12 ga Shotgun case head, headstamp: ELEY'S "GRAND PRIX" .12. (Pl. 4n).

12 GA Shotgun case head, headstamp: DOMINION METEOR No 12 (in smaller letters on second line) MADE IN CANADA (Pl. 4m).

12 ga Shotgun case head, headstamp: UMC ARROW No 12 (in smaller letters on second line) REMINGTON , and on the side of the jacket REMINGTON UMC, the jacket is long at 27 mm (Pl. 4k).

16 ga Shotgun case head, headstamp: WINCHESTER LEADER No 16 (40)

The shotgun cartridges, the 30-30, and the 30-06 cartridges were found mostly within the sod, which suggests an age postdating the Fort Reliance occupation, in some cases very recent. Nevertheless, all the types represented, including the high-powered rifle cartridges, were known in the Gold Rush period, from the middle 1890s onward. The following information on the headstamps provides more precise stopdates in some cases, but I have been able to identify several headstamps. The most useful manual is that by White and Munhall, but it was published in 1963 possibly predating some of the recovered headstamps.

The raised "H" headstamp on the Henry cartridges was used from about 1866 to 1890 (Smith 1954), in contrast to ones with a sunken "H" which were manufactured from 1873 until well into the present century by the Winchester Repeating Arms Company. Another criterion for dating these cartridges is slight variations in length. All from the Koyukuk sites contemporary with Fort Reliance are about 0.89 inch long up to the rim of the head or slightly over 0.9 inch long (23.7 mm), including the head without secondary swelling said to occur from use in the Model 1866. This dimension indicates that these are a late .44 Henry flat case. Early forms of the same case are only 0.815 and 0.822 inch long (see Barnes 1980, Logan 1959, Smith 1960, Williamson 1952). Flat Henry cartridges are ubiquitous in western and interior Alaska and the Yukon Territory in late 19th century sites.

The 22 special was used in the Winchester Model 1890 pump and thereafter various other arms (Shinkwin and Andrews 1979:33, their technical data from Barnes 1965 edition). At the Erskine House in Kodiak, on the Gulf or Alaska, as well as at Fort Reliance the U and H headstamps co-occur. Production of the U headstamp, by Union Metallic Cartridge Company, ceased in 1902 though this marking evidently has continued to the present date on various cartridges manufactured by Remington-UMC and by Remington (White and Munhall 1963:137, though some reports cite a 1902 cutoff date for the H headstamp). The H headstamp by Winchester also continues to the present day (VanStone 1970 citing Williamson). The date for this occurrence then is no earlier than about 1891 and could be more recent by several decades.

The cartridge with no visible headstamp best fits the dimensions of the 45 Colt which Logan (1959:139) states "made history in the old days." It clearly fits the trading post phase.

The 303 British was used in England since around 1890, and was especially used in the Lee-Enfield rifle which was used in Canada from 1895 essentially to the present time. The headstamp probably is from the Imperial arms company of Canada and the cartridge likely is very recent. IMPERIAL headstamps are not listed by White and Munhall in their 1963 manual.

The "06" in the 30-06 cartridge refers to the year 1906 in which cartridge (not the WRA headstamp) was developed, apparently first for U.S. Army use. I have not found a listing of the ARMY headstamp, while "Co." with W.R.A. indicates manufacture before about 1940-1941 (White and Munhall:209).

The 30-30 is a very popular arm available from Winchester Repeating Arms Company after 1895. The Dominion cartridges can date to as early as 1895 though in at least one case those from Fort Reliance postdate 1947. The "DOMINION 30-30" marking appeared in 1947, replacing the "D.C.Co."for which no date of first use is given (White and Munhall 1963:86). The "REM-UMC" postdates the merger of Union Metallic Cartridge and Remington in 1902, specifically appearing in 1911 and continuing thereafter to the present (White and Munhall 1963). The added "W.C.F."(Winchester Centre Fire) is a variation on W.R.A. Co. not listed, however, by White and Munhall. These cartridges, and also the 30-06, thus can date broadly within the last 100 years. Both United States and Canadian manufacture is indicated, showing that some of the cartridges came from Canadian suppliers.

The same is the case for several of the shotgun cases, which is in keeping to their gold rush or later dating when supplies were no longer exclusively those brought up the Yukon by the American traders. Winchester actually marketed the Leader line as early as 1880. It was advertised, for instance, in the 1894 Montgomery Ward catalog, but neither the Leader nor the Arrow are among the Winchester and Remington shotgun shells advertised by Stoeger in 1958. These headstamps were not researched, this type of information not being available in the cartridge references consulted.

Mechanical or Gun Part (lever or slide action?), highly corroded from hearth ash, as figured (Pl. 67e). Numerous comparisons with parts catalogs and consultations with specialists have failed to identify this item as part of a rifle. It is from the traders' trash pit.

AI.3.2. Construction Materials Complex

This section also includes brads, staples and screws from shipping containers.

Nails and Other Fasteners

A few wire nails were recovered, in nearly every case from superficial contexts. Larger numbers of cut nails (square shank and square head) were recovered from almost every earlier historic context. A change from cut nails to wire nails occurred on the Yukon between 1886 and 1896. Hayne and Taylor (1897:11) record the following note in a list of items with which the Klondike prospector should be equipped: "Wire nails (no others are used in this district)"; possibly an overstatement since cut nails were found in some old buildings in Dawson.

Though some wire nails were produced in North America as early as 1870 or 1875 they were little used for construction there until about 1883-84. Thereafter they rapidly gained in popularity and by the beginning of the 20th century only a small minority of nails used in construction were of the cut type (Priess 1974). Only cut nails were found in deposits conclusively associated with the Fort Reliance post occupation. Judging from their occurrence in two test pits at Fortymile, established in 1887, use of cut nails continued in the Yukon during the late 1880s, after Fort

Reliance was abandoned (author's field work 1991). Wire nails might not have become common until the Klondike Gold Rush.

Cut Nails (Pl. 10a). There are 277 cut nails of various sizes. They are strongly associated with the main building where 148 specimens were recovered from three units (House 7 test, TP K and Pit 3). By contrast, only 20 specimens are from the three south-end house pits. Some specimens were found in the turf above Houses 4 and 12. They may postdate these houses, but considerable numbers of cut nails may have been scattered over the site from abandoned buildings when their wood was being recycled. The condition of the nails varies: some are only lightly rusted, others more corroded while those from the three provenience units associated with House 7 are very heavily corroded, probably because they had been burned in the stove. Nevertheless, nails recovered from a semi-consolidated hearth deposit at House 10 are in very good condition and little rusted.

It was possible to estimate the length of 194 cut nails. The distribution is as follows. The pennyweight size designation here actually is the scale used for standard wire nails. Few specimens measure precisely to the half or quarter inch indicated.

1" (2d) -- 6	3.0" (10d) -- 18
1.25"(3d) -- 20	3.5" (16d) -- 14
1.5" (4d) -- 47	4.0" (20d) -- 1?
2.0" (6d) -- 66	4.5" (30d) -- 1 (tip broken, or long 20d)
2.5" (8d) -- 21	

Wire Nails (Pl. 10b). Very few lots of wire nails were recovered. They postdate the Fort Reliance occupation, and for the information it may shed on later use of the site, the provenience of each specimen is listed below. Nails in a range of sizes were brought to the site after the post was abandoned, in some cases probably imbedded in crates or boards. Their distribution in the turf or fill of three housepits and at three test pits shows that there was fairly extensive use of the post-Fort Reliance surface on the southern half of the site. The house depressions themselves may have provided attractive loci for camping because of the protection from the elements that they provided.

No. 76 10 specimens House 1, base of organic litter and rootmat; 40D, 16D, 10D and 6D length but thin.
No. 85&94 2 specimens House 1, organic parting under top sandy soil but above floor (the sandy soil may be from an animal burrow in the corner). Thin box nail.
No. 103 1 specimen Same as 85& 94. Thin 4D or box nail.
No. 326 1 specimen House 3, just under the sod (above floor). 30D.
No. 328 1 specimen House 3, in sod. 10D.
No. 603 1 specimen House 5, in turf. 20D.
No. 756 1 specimen House 10, small, cut nails found in associated hearth.
No. 1045 1 tip frag. TP F, in sod & humic layer
No. 1046 2 specimens TP F, in red-stained soil. 10D, 8D.
No. 1047 Assembly TP F, red-stained soil, metal strip with 3 small nails.

No. 1060 1 specimen TP G, 14 cm DBS. 8D.
No. 1089 1 specimen TP H, sod. 20D.
No. 1090 1 specimen TP H, sod. About 20D gauge, but longer.
No. 1489 1 specimen House 1, turf. 10D.
No. 1563 51 in lot House 1 entry passage fill, just under the turf. Tight cluster "bag lot"; some slightly bent probably indicating salvage, but heads are not battered. Most poorly fit size template in 1894-95 Montgomery Ward catalog, being lighter in weight or intermediate in length: 1 weight like 10D but longer, 1 length over 20 but weight about 16D, the rest slightly exceed length of 30D.

Spike. Spike 180 mm long inclusive of symmetrical rectangular head (325). A spike of identical type but slightly lighter and longer (1415) was picked up at the eroded bank. It is not certain whether the latter originated from the site or from timber carried downriver during floods.

Tacks, Brad and Staples

Tacks. (a) 13.4 mm long, flat round head (1187).
(b) 14.5 mm long, cut, domed round head "Hungarian nail" format (1249).
(c) 30 mm long, large, copper, flat round head (Pl. 10c).
(d) 11 to 16 mm long, 3 specimens found together, form appears to be like a small short cut nail but corrosion obscures details (350)
(e) 26.7 mm long, alloy (lightly corroded, no rust), domed round head, tapers to rectangular tip (359c).

Brad. Small 23.4 mm-long nail, rectangular or cut format with thin, small spatulate head formed by flattening one end from the side (948, turf, probably post-Reliance).

Staples. One complete and two partial: 41-mm-reach between prongs, width expands in thin middle reach (1 found with brad; 626; 644 tentative identification as corroded staple).

Screws (Pl. 6). Wood screws and machine screws were recovered from Reliance period contexts, including the housepits. (a) Woodscrew (Pl. 6f), large (size 14), slotted flat conical head for recessing, iron, incomplete. (b) Machine screw (Pl. 6g), large, slotted flat head for recessing, iron. (c) Flat slotted head, no threads visible (long unthreaded area of shank recovered, size between that of the preceding two specimens (Pl. 6g, 1160), (d) Machine screw (1248), thick flat slotted head not tapered for recessing and in this manner differs from No. 305 which is of similar size.

Wire (Pl. 10d). Iron wire is associated with post-Reliance reuse of the house pits while uncommon copper wire comes from Reliance period contexts. (a) Several feet of single iron wire (1568). (b) Short folded length of wire (83), (c) c 20 cm of light copper wire; (d) highly corroded fragments (542); (e) 8 cm length of copper wire (306).

Flat Glass

Numerous flat glass sherds (not illustrated) are derived from window panes. The 49 catalog lots, derived from 18 excavation units (counting contiguous excavations as one unit), contain from 1 to 46 sherds each. There would be little point in counting the exact number of sherds inasmuch as within each unit most fragments are derived from a single or small number of panes.

It is assumed that all the flat glass is from window panes, but mirrors and rectangular lamp windows possibly also are represented. Most sherds have a slightly iridescent polychromatic lustre or film on both surfaces, insufficient to meet the criteria for mirror glass. The main cause for the iridescence or "rainbow effect" is weathering, the extent of which is conditional upon the proportion of alkali in the glass and soil chemicals (Roenke 1978:22-23). There are two specimens, from Houses 2 and 3, that could be described as retouched, but the "retouch" may be unintentional from trampling. One additional specimen described among the implements has a ground edge that may have arisen through utilization as a scraper. Scratching is more prevalent: some sherds show gouge-like swarms of scratches, others very numerous fine scratches, while the majority bear less numerous randomly oriented scratches of varying heaviness. It appears that the shallow soil context context has been dynamic and subject to trampling.

This is good quality glass, free of inclusions, striae and other defects. Only rarely is the smooth surface pitted or marked by rough spots, and then on such a fine scale that these imperfections are difficult to see. Bubbles are absent under low magnification, except for thin, aligned elongate bubbles of pointed lens shape present near the surface of several sherds. Nearly all of the glass is slightly green in colour. The glass does vary in thickness. As is indicated in Figure 5.1, various areas of one large sherd ranged between 1.33 and 2.00 mm thick, though the variability of most sherds is less.

This variability complicates recognition of standard pane thickness. Measurements in Figure A.1 should indicate pane thickness, but because of fragmentation a single pane potentially is subject to almost infinite representation in the sample. For instance, the 28 sherds in lot 1070 could all have come from a single pane. Over-representation in this case was partially controlled through selecting a sample of only seven sherds from that lot for measurement. The majority of panes tend to be about 2 mm thick, but there also were uncommon "double strength" panes exceeding 2.6 mm and reaching 3.4 mm thickness. There also may have been thin panes ranging from 1.2 to 1.7 mm thickness. During the period when Fort Reliance was occupied, sheet glass was sized (i.e., thickness indicated) according to the weight in ounces per square foot (Roenke 1978:37). Reliance glass is in the range downward from 26 ounces to less than 10 ounces, 2 mm thick glass being about 14 ounces. This range crosscuts the later standard for flat glass set in the United States in 1924 (Roenke 1978: Table 2).

A tendency has been observed for later window glass to be thicker than earlier glass in the Pacific Northwest region. Roenke (1978:Table 30) presents the following modal thicknesses:

1850-1865	0.075 inch	(1.9 mm)
1855-1885	0.085 inch	(2.2 mm)
1870-1900	0.095 inch	(2.4 mm)

The modal interval of 2.00-2.09 mm at Fort Reliance is essentially in accord with this trend in light of the 1875-1885 date of occupation.

THICKNESS OF FLAT GLASS

Range, mm (mm)	No.	Percent	2 Intervals combined		Variation Within Single Specimens, Examples
-----1.1	0	-			
1.20-1.29	4	3.1%	4	3.1%	
1.30-1.39	3	2.3			1.33
1.40-1.49	5	3.9	8	6.2	|
1.50-1.59	8	6.3			|
1.60-1.69	6	4.7	14	11.0	|
1.70-1.79	13	10.2			|
1.80-1.89	16	12.5	29	22.7	| 1.84 |
1.90-1.99	8	6.3			| 1.90 | 1.98 | 1.90 |
2.00-2.09	23	18.0	31	24.3	2.00 2.10 | 2.06 |
2.10-2.19	13	10.2			
2.20-2.29	7	5.5	20	15.7	2 22 | 2.36
2.30-2.39	8	6.3			2.32 | |
2.40-2.49	5	3.9	13	10.2	2.40
2.50-2.59	0	-			
2.60-2.69	3	2.3	3	2.3	2.63
2.70-2.79	2	1.6			|
2.80-2.89	0	-	2	1.6	|
2.90-2.99	1	0.8			2.97
3.00-3.09	1	0.8	2	1.6	
3.10-3.19	0	-			
3.20-3.29	1	0.8	1	0.8	
3.30-3.39	0	-			
3.40-3.49	1	0.8	1	0.8	
3.50-----	0	-			
Observed	128				

Figure 5.1. Thickness of flat glass.

Distribution. Flat glass was common in House 7 (the largest structure on the site), in Test Pits adjacent to House 7, in House 6 a small structure located adjacent to one corner of House 7, in House 4, in Test Pit G which is located adjacent to House 4, in the fill above the floor of House 12 (a context that might receive scatter from House 4), and in Test Pit M or the so-called "bead patch" which is not located next to any structure. Flat glass was uncommon in semisubterranean houses 1-3 and the floor of semisubterranean house 12. Except at Pit M, the distribution encountered meets expectations for House 7 to have had windows and for the semisubterranean houses not to have had glass windows. Although House 4 has a depressed floor, the evidence of glass recovery suggests that there also may have been a windowed cabin here.

Recycled Metal

Construction Strips and Plates or Patches--Probably Cut from Recycled Metal Sheet. There is a heterogeneous lot of strips and plates of sheetmetal that probably had been used in construction or for various other purposes. The provenience of these specimens strongly favors the sod or turf layer, a context that contains materials of varying age. Wire nails penetrating one specimen are late, indicating a specimen that probably postdates the occupation of Fort Reliance.

135 x 26 mm (418), one 5-sided nail hole, relatively heavy metal.
180 x 16 mm strip (492), 4-sided nail holes (for cut nails).
300x25-26 mm (Pl. 10h, 431), heavy gauge, 5-sided nail hole at end)
600 x 21 mm (1047), 6 holes, 2 small wire nails in place.
Edging? (781), 119-mm-long metal strip bent to face the edge of an object?.
50 x 55 mm sheet (894), 4 angular holes of variable size, placed irregularly).
Sheet with nail holes (838), fragmented and disintegrating, more or less like No. 894.
Sheet(s) with large aperture, incomplete (360-361), 360 x 155(x 266 if the two fit as appears to be the case, when fitted there is a 140 x 135 subrectangular aperture, 3 angular nail holes along one edge.

Modified--Stock Metal Sheet. A number of thin metal sheets, not utilized in construction, appear to have been produced from the walls of recycled cans and evidently were being kept for eventual use. The metal sheets derived from one pound powder cans conceptually belong here but are described among fire arms. The depth of these objects varies from the surface to Fort Reliance period house floors. Outside the buried house floors, the turf and surface contain material of varied age. Metal derived from powder cans evidently belongs to the Reliance period, as well as two items (below) from the floor of House 12. Other specimens have to be examined case by case, taking into consideration their associations.

Specimens of unstandard sizes, sometimes irregular along 1 or 2 edges (694, 721, 857, 914, 955, 1322) 31x57, 42 x 52, 38 x 53, 49 x 62, 22 x 81, 52 x c150).
Rectangles (1473, 1474), 125 x 139, 125 x 130 mm, both are from the side of a single can (not powder can). They were found approximately 1.8 m apart on the surface.
Piece 103 mm wide, lacking seams, lighter than powder-can metal (1476), 2 specimens, corroded (surface, may be post-Fort Reliance).

Stovepipe Jack or Adaptor, made from a lard pail. This artifact was recovered on the surface and

postdates the Fort Reliance occupation. The bottom has been cut out of the pail and the sides slit for several cm to allow the diameter of the opening, which is roughly 135 mm, to be changed. The lard pail is an old type in which the bail inserts into the round boss of an oval plate attached by two rivets to the side of the pail (Pl. 10f).

A1.3.3. Prospecting and Mining Complex

One artifact type, and tentatively a second item recovered at Fort Reliance, are the only ones exclusively associated with mining. These are the cupels from House 4 and evidently also House 3. Cupels were used for assaying, especially for sulphide ores. The other artifact, which also could have been used in assaying, is the probable fragment of a small crucible.

Three specimens from House 4 unequivocally are cupels: one complete, one missing the base, and one fragment (Pl. 1j-k). The complete specimen is 28.7 mm in diameter and 12.3 mm high. The paste is fine granular in appearance. The other two specimens are identical in size and paste.

The identification of two fragments from House 3 (one specifically recorded as from the turf layer, another deep in sand fill under the turf) is less certain (324b, 338). These are side sherds, missing the distinctive cupped upper surface of this artifact. Like cupels, they are uncoloured tan, unglazed, and unfired except through use, but at roughly 45 and 48 mm both are of greater diameter than the cupels from House 4. The paste also differs inasmuch as it contains some particles of very coarse sand--almost pea gravel--though the surface is smoother than that of the House 4 cupels. This paste and type of product hardly is to be attributed to culinary ceramics. Peele (1941:30-14) notes that a range of materials can be used for cupels, though bone ash is the most common, and that it often is most convenient to make them locally from standard moulds. Significantly, the paste of the two cupel fragments is similar to that of the probable crucible. According to Peele notes that common cupel sizes are 1, 1.25, and 1.5 inch (25.4, 31.8 and 38.1 mm), but those sizes fail to match any Fort Reliance specimen.

The probable crucible (Pl. 1h), found on the floor of House 3 appropriately next to the hearth, is a wall sherd 7.2 to 7.6 mm thick from an object estimated to have been about 48 mm in diameter. Like all the preceding specimens, it is uncoloured and unglazed, though well smoothed on the exterior. Both cupels and crucibles are used in the fire assaying processes as described below. Peele (1941:30:21) specifies soft-clay crucibles for assaying. There is an encrustation of slaggy material on the interior surface of the present specimen, which provides the strongest indication of its use.

To determine whether any of the three cupels actually had been used, an analysis was made by Marilyn Laver of the Canadian Conservation Institute, Ottawa. During cupellation, a step in assaying, litharge containing lead is absorbed into the clay of the cupel. The object of the analysis was to test the archaeological specimens for lead. Lead was confirmed, indicating that the cupels had been used. Ms. Laver reports as follows:

Etiology

In the classical process of fire assay, ground ore samples are mixed with a flux, generally containing soda (sodium carbonate), borax, silica, carbon (typically flour), and litharge (PbO) and fused at temperatures up to 1200 C for at least an hour [in a crucible]. After cooling, a button of lead containing gold and other precious metals is separated from the slag. Next, the button is heated in a vessel called a "cupel"(generally made of bone ash, but magnesia and cement are also used). In a variation of the method, silver is added to collect the noble metals. During the cupellation process, the lead button in the cupel is oxidized to form litharge. The liquid litharge flows over the surface of the melted lead and carries with it such base metals as copper and nickel; the litharge is then absorbed by the cupel, appearing as a dull red or black ring on the surface. The lead in the button is eventually all removed as litharge, with a good cupel being able to absorb 98.5% of this compound, the rest is lost by volatilization. A good description of these and other aspects of the fire assay is given in F.E. Beamish, "The Analytical Chemistry of the Noble Metals", Pergamon Press, London.

Method of Analysis

Nondestructive qualitative analysis was done on the surfaces of the cupels using radioisotope excited x-ray energy spectrometry. An Iodine-125 source and intrinsic germanium detector were used.

Results

The spectra from all surfaces analyzed showed lead to be the major element detected. No difference could be detected between the amount present in the concavities and that in the sides or bottoms [exterior flat bottom] of the cupels.

Discussion

The observation that there is lead present in the surfaces of the cupels tends to suggest that they were used for fire assay. There did not, however, appear to be any significant difference in the amount of lead between the concavity (where the reaction takes place) and the sides or bottom of the cupels. This distribution of the lead may have been due to the burial environment.

It is difficult to say what the appearance of a used cupel might be after burial; although there is no sign of a "dull red or black ring on the surface", there is some roughening of the concave surface in a ringed shape. This can be seen particularly on LaVk-1:397, which also has about ten spherical accretions adhering to the upper edge. These were not sampled, but it seems probable that they are solidified droplets of material from the melt.

In conclusion, the presence of lead in these objects tends to support the theory that they were used for fire assay, although no similar, used objects were available for comparison.

Further research is required to discover what types of fires and ovens were used at Fort Reliance to heat the crucibles and cupels, and under what conditions of use or burial the lead could have been disseminated throughout the cupels. Comparable studies of other, used cupels are needed (Laver correspondence with Clark, Oct. 1985). If fire assaying was done at the site one would expect to find additional equipment and supplies. Much of it, though, would be used to exhaustion (lead) or taken away from the site (tongs, cupel tray etc.), disseminated and overlooked during excavation (acids, soda, litharge, etc.). Ore would have to have been crushed, but a suitable natural anvil might have been found among small boulders along the river bank. Such natural anvils should have been left behind in the site. One large cobble was found in the House 4 test trench, but no signs of use were recorded. On the question of a source of heat,

Peele (1941:30-03) notes field construction of small furnaces to hold up to a half dozen crucibles and twice that number of cupels. He reports that fire brick or a core of crushed used crucibles is required for the lining, as stone and ordinary brick are wholly unsatisfactory. No fire brick was recovered. Iron grates also are required. Coke, coal or charcoal can be used as fuel. The apparatus can be encased and thus made portable and subject to removal from the site. Otherwise, traces of such a furnace ought to be recovered in the vicinity where the cupels were found.

The final object to be noted here (Pl. 1i, 1088, found next to the main building, in TP H sod layer) is an unglazed 5.9-mm-thick, rimsherd characterized by a thick dark grey or black wash and paste with coarse sand or pea gravel particles suggestive of the past of the crucible sherd described earlier.

AI.3.4. Tools

Standard Hardware

This group consists of tools that are standard hardware items and also improvised implements.

Scissors (Pl. 6s). Parts of both blades, incomplete but apparently a conventional shears format.

File (Pl. 6p). Distal end portion of flat file.

Chisel (Pl. 6q). Cold chisel, octagon, shows use, 122 mm long, 14 mm wide (rated half inch).

Knife Blade? (Pl. 6t). The heavily corroded, 127-mm-long blade is straight along one edge, slightly curved along the other edge and pointed at both ends (very slightly squared-off at one end, but that may be due to corrosion). There is no certain trace of any sharp edges, but the piece is greatly altered by corrosion (it may have been cleaned out of a hearth).

Prong (Pl. 6k), Single-pointed object of heavy-gauge wire, 82 mm long, lighter than any wire nail of comparable length recovered from Fort Reliance. Presence of solder at the blunt end suggests that it was part of a composite implement.

Implements Made from Recycled Material

Scraper on Glass Sherd (Pl. 6n). One flat glass sherd is heavily abraded on both surfaces. Adjacent edges are worn or ground smooth. This small, 26 by 21 mm fragment appears to have been used for scraping, though the amount of abrasion on the faces seems to be excessive if the objective was utilized at the edges.

Wire Tool (Cleaning Rod?) (Pl. 7f). Improvised 32 cm long object, twisted doubled strand of wire

forms handle, carefully formed 5-loop coil 26.6 mm in diameter forms the working end (H1 post-Fort Reliance turf).

Thin Forged Steel Plate (Pl. 7e), 47 x 120 x 2.6 mm, creased and snapped along 3 edges, 4th, long, edge highly swedged from pounding indicating that this piece may be an implement, such as a chinking iron, or be cut from such an implement.

Small Scoop (Pl. 6t). This 97mm-long object is made from recycled powder can metal, rolled to shape, and along the edges retains the double-thickness metal seam. One end has been thoroughly flattened, probably for insertion into a handle.

The next four folded metal or scoop-shaped objects were found in contexts ranging from the surface to soil below the turf. They should be attributed to the Reliance period inasmuch as metal from powder canisters appears to have been utilized.

Scoop-Shaped Objects (Pl. 11d), 90 mm long probably made from side of a powder can; (Pl. 11c), another similar object.

Scoop-Shaped Object (Pl. 11b), possibly a larger form of the objects in Plate 11 c-d, 18 mm wide at narrow open end, triple that at the wide back end, ≤ 175 mm long, made from side of powder can, recovered somewhat crumpled.

Scoop-Shaped Object or Narrow Pan (Pl. 11a), unfinished. One end is folded up to a slightly rounded seamless prow, the sides are slightly upturned, and there is a 26-mm-long cut into the other flat end probably further shaping or folding. The 170-mm-long object is made from a 200-mm-long strip of thick sheet metal apparently from a powder can.

AI.3.5. Household and Culinary Complex

Each distinctive or different specimen is described

Metal Cans/Containers, Recycled Metal Cans/Containers and other Recycled Metal Sheet

Cans and other metal and the several objects that result from their recycling are classified as follows. In this section, though, only the cans (and portions) are described.

A. Original Format: Container
   1. Not Modified (described below)
      a. Cans and cigarette containers
      b. Peel Strips
   2. Modified
      a. Discard material (produced through process of modification)

b. Stock material (defabricated containers; these sheets are described with the Construction Complex)
c. Implements made from recycled containers or sheet stock (described in AI.3.4).

B. Original Format: Not Container
1. Modified (recycled)
2. Not Modified. This category provides logical symmetry to the classification; these objects are described according to their functional group elsewhere in the text.

Cans, Not Modified (Pl. 7-8). Most of the cans are cylindrical, though there also are several rectangular ones and one conical can (terminology from Wade 1978). No elliptical and ovoid cans were recognized. All cans but the conical one have a single rolled side seam, unsoldered except for the sardine cans and the conical can which are soldered. In the conical can the sides simply appear to overlap or are lapped (corrosion makes this observation somewhat uncertain). Again excepting the sardine cans, none of the ends or can bodies are stamped (bearing the company name or other information). Ends (usually discs) were crimped to the can body. Some rectangular cans also were crimped and soldered. Caps for filler holes, commonly present on cylindrical cans, were soldered. Usually the top end has a recessed channel surrounding the filler hole. Each can excavated or each type found within a surface accumulation at House 7 is described below. The provenience of these specimens is all surficial except for the flanged disc from House 12. Those from the surface and turf appear to postdate the Fort Reliance occupation.

Can (1462), cylindrical?, completely crushed and corroded, heavy solder from top (not present), ≤ 120 mm dia. x 101 high (not a powder can).
Can (1464), cylindrical, 99 mm dia. x 120 mm high, heavily soldered 67 mm filler hole cover with central pin hole, size close to Type 5 below except the filler cap is larger.
Can (489), cylindrical, largely disintegrated through corrosion, ≤ 90 mm dia., 42 mm filler disc.
Can (918), cylindrical, crushed, ≤ 73 mm dia., 39 mm filler cap.
Can for slip-on end (74), cylindrical, 79 mm dia., 120 mm high. There is a flanged "seat" around the top of the can, 8.5 mm below the edge.
Can without one end (1482), cylindrical, 76 mm dia., 111 mm high, heavily soldered filler cap and central pin hole
≤ 23 mm dia (band of solder obscures edge of the cap)
Can top (detached) (287), large, 138 mm dia., very large 108 mm filler disc with soldered pin hole; bears trace of lapped seam from the upper portion of the can body.
Large can top (Pl. 7c), 189.5 mm dia., with raised rings or ridges, detached from body of can probably through removal of peel strip. No can of concordant size was recovered (House 2 depression, surface; undoubtedly post-Reliance).
Disc with flange (Pl. 8d), a can top or base, not a filler cap, possibly discarded from container modification, 59 mm dia. Size is large for percussion cap container but may be in range of centre-fire primers (H12 second floor).
Sardine can (Pl. 8f), rectangular 100 x 55 mm approx, tab to hold key at base, heavily soldered seams, base embossed FRANCE, printed inscription on sides and end of which the letters ...DINES are legible. (H4 sod)
Cigarette tin? (Pl. 8h), rectangular 99 x 75 x ≤ 23 mm with hinged lid, poor condition (Pot hunters' cache, H1 surface--trace of green moss present--or vicinity). The lid is hinged by metal tabs and grooves (into which the tabs insert) alternatively cut into or from the top and base. This can is similar to one from Kolmakovskiy

described by Oswalt (1980:Fig. 18) which, on the bases of the preserved label, he identifies as an Edgeworth tin measuring 113 x 83 x 28 mm, thus differing in size from the present can, though Oswalt also reports a 99 x 77 mm Dills Best base (Appendix I:140). This latter brand came into use in 1885 (Oswalt 1980:70), but just as there was later use of the Reliance site, there was some occupation at Kolmakovskiy until as recently as 1917. Peel strips (a) with key (1543), 8 mm wide, the type that comes, for instance form corned beef tins, though heavily corroded traces of paper are present; (b) 5.8 mm-wide metal strip (724; (c) cut scrap or peel strip, variable 5mm ± wide (1273; (d) peel strip? 13.3 mm wide (329); (e) peel strip?, 11.4 mm wide.

Sample collection from surface accumulation in SE corner of House 7 (in most cases only one specimen of each format was collected. The number cited is the number of examples observed in the field). This group represents a relatively discrete event or stay on the site for several weeks (judging from the number of cans), probably early during the twentieth century when cabin structure 7 no longer was standing.

Type 1: sardine (Pl. 8g, 1 example), larger than sardine can No. 491, 106.3 x 76.5 x 22 mm, heavy solder residue at top and end seam, base slightly recessed for key. Oswalt (1980:Appendix 1:126, Fig. 13) reports a soldered sardine can from Kolmakovskiy of approximately the same size--108 x 77 x 20 mm--with key impression on the bottom that is identical to the Reliance can. Oswalt (1980:52) notes that according to local information sardines were imported for consumption by the trader, about the turn of the century. This dating is in accord with the context of the present specimen.
Type 2: rectangular with lid (Pl. 8b, 1), 120.3 x 72.2 x 108.8 (height for base only--add 15 mm for the top), solder droplets present locally on top and side seam, a small domed area of the top has two small holes sealed with solder.
The top may have slipped over the can body, and, in any case, probably was detached through removal of a peel strip.
Type 3: tapered (conical) with lid (Pl. 8e, 1), 102 mm dia. at top, 82.7 mm dia. at base, 49 mm opening in top closed by cap, height with peel strip (not recovered) ≤ 55 mm. A modern example of this type can would be those in which plum puddings recently were sold.
Type 4: large cylinder (Pl. 7g, 3), 107 mm dia. x 123.9 mm high. Can is of fresh appearance but has a large 55+ mm cap (closing a filler hole of slightly smaller size) with soldered central pinhole.
Type 5: like Type 4 but has different size cap (1451, 2 + 1 Pit 2), 101.5 mm dia. x 119.5 mm high, heavily soldered ≤ 58 mm sealer cap (edge of disc not visible) with soldered central pinhole.
Type 6: large with flange at top (1452, 1), rim with flange and folded-over top edge (to receive slip-on end?), ≤ 107-108 mm dia. x160 mm height (without end).
Type 7: small rectangular (Pl. 8a, 1453, 1460, 3), 55 x 41 x 94.5 without cap or top, condiment-can format.
Type 8: medium size cylinder (1454, 3), 86.5 mm dia. x 115 mm height, heavily soldered 46 mm cap closes filler hole of slightly smaller size.
Type 9: small short (1455, 6 from H 7, 2 from Pit 2), 75.6 mm dia. x 84.5 mm height, 22.7 mm sealer cap, solder droplets present, both ends in place, condensed milk tin judging from the presence of two opposed opening gashes near edge.
Type 10: small, tall cylinder (1456, 11 + 2 from Pit 2), 75.6 mm dia. x 111 mm height, 23 mm sealer cap (approx., edges not visible), both ends in place, condensed milk tin (opposed openings as in Type 9).
Type 11: cylinder, length between Types 9 and 10 (1457, 4), 68 mm dia. x 101 mm height, soldered filler cap ≤ 39 mm dia. (edges of disc not visible).
Type 12: cylinder, taller than Type 9, shorter than 11 (1458, 2 from Pit 2), 70 mm dia. x 91.3 mm height, no filler cap but one end, possibly the top, is completely cut out, lap seam on No. 1458.
Type 13: very long, tall (1459, fresher appearance than any other can, 91 mm dia. x 191 height without end, slight constriction at top suggests that there was a slip-on end.

Modified--Discard Material or Portion of Container. The provenience for this group is variable. Many specimens are associated with the Fort Reliance occupation, including what may be the earliest floor of the semisubterranean houses (House 12). This indicates that the traders probably imported canned goods for personal consumption and possibly to trade. Several from the turf are

of uncertain age, and some appear to postdate the trading post. Where appropriate, as in the case of parts of powder canisters, these specimens are described elsewhere. Specimens noted here may be from food containers and possibly a petro can.

Discs cut out of top of container encompassing the area around the filler hole: (a) seven-sided disc (837) 65 mm dia., hole is 34 mm dia; (b) (Pl. 8c) 90 mm dia, hole is 36.6 mm dia.

The curved edge of the top of a large-diameter can or cylinder (767), the top of the container apparently was opened roughly through cutting out a large circular opening ⌀ 130 mm in dia. the edges of which form one edge of the specimen.

Cut and mangled **portion of large rectangular can** (probably petrol can) with portion of seam (1471), 220 max. height (incomplete), 220 max width of one side (incomplete), soldered seam (surface).

Other sheet metal scrap. The following material is listed to complete the record. It probably originated from cans.
Rusty disintegrating scraps (433, 634, 758, 858, 925, 1321, 1361, 1372, 1520, 1552, 1583)
Tiny scraps (97, 245, 246, 271, 272, 541, 769, 907, 1016, 1103).
Narrow 9-10 mm strips (882, 883).
Rounded metal strip (472) 195 mm long, 8 mm wide, looks rolled to that shape.
Crumpled scrap (374).
Irregular disc, probably hole cut out discard (489).
Large sheets, irregular shape (895, 1470, 1472, 1475), 78 x 57, 230 x 340, 94 x 340 & 54 x 183 mm. The larger pieces may have been utilized.
Plated scrap with irregular ruptured edges (1185).

Ceramics (Table Ware)

The ceramics are almost exclusively ironstone. They are sorted into three groups: plain, painted ironstone, and those with transfer printed designs. It is not certain that there are any stamped designs. Excluded from this description are 63 sherds surface collected from the river bank and 5 highly altered burned specimens. Several additional sherds are burned but not to the extreme of losing their colour and pattern. The only items in the surface collection not essentially duplicated elsewhere are two apparent crockery sherds with heavy cream-yellow glaze (1410). These do not necessarily belong to the Fort Reliance phase of occupation.

Plain Ironstone. Five sherds or sherd groups are to be noted (there are 11 additional small sherds):

1. Possible lid for soup tureen or large covered dish, with undistinguished muted embossed design (Pl. 9p).
2. Cup, creamer or sugar bowl handle fragment (1300+1351).
3. Mug, rimsherd.
4. Base of cup?, small hand painted burgundy X-mark on base.
5. Plate, partially reconstructed (814+834+891). The base bears the mark IRON STONE CH[break truncates the word CHINA] and a part of the lion, crown and unicorn coat of arms (truncated by the break). The unicorn has a long horn and the same variety of this allegory may be seen in a J.&.G Meakin Hanley England potter's mark (Briscoe 1992: Fig. 8 d).

Painted Ironstone. There is one floral and leaf style of painted ironstone among which it is possible to define one pattern. Additional patterns are present although they cannot be defined on the basis of the small sherds recovered at Fort Reliance. Examples of other patterns in the floral style are to be seen in the Kolmakovskiy Redoubt collection (Oswalt 1980: Pl. 15). Some of the ware may have been decorated only by stripes running around the rim, though in larger sherds the stripes usually accompany additional motifs. The Fort Reliance sherds have a bold, but cheerful band of pointed leaves, in light green, sometimes augmented with deep green, blue or even burgundy coloured leaves on the same dish, along either side of a delicate black stemline. A fortunate flick of the trowel may surprise the archaeologist with a bright red flower with serrate edges or a crudely daubed blue flower, with or without centres. In an almost idiosyncratic message from a century ago, a patch of yellow may lay on the stem line. None of the sherds has a potter's mark

The following classification represents an attempt to foresee complete pieces while working with the limiting attributes of fragments.

A. Stripe only, burgundy coloured (Pl. 9f, 48, 596, 1540).

B. Deep green group, insufficient recovery to determine pattern; 5 sherds: 372 (rim 428 (Pl. 9c), 1066x2, 1077, 1157.
a. One sherd has a blue flower similar to that in defined pattern D (below). Deep-green coloured leaves (alone),
b. same with medium blue leaves or flower,
c. same as b with burgundy stripe on inside,
d. deep green with burgundy stripe on exterior.

C. Wine or burgundy group, insufficient recovery to determine pattern. The largest sherds (462 + 414) indicate a mug with horizontal band of dark blue leaves, additional green leaves, burgundy stem, large unidentified burgundy area (truncated at break) (see VanStone and Townsend 1970 for similar not identical specimen); 8 sherds: 301, 395, 414 (2 sherds), 462 + 414 (burned), 553, 572, 933 (cup handle frag., burned).
a. Wine-coloured leaves alone,
b. wine and medium blue leaves,
c. wine, blue and green leaves with wine coloured stem,
d. medium blue leaf or flower. .

D. Light green leaves.
9 sherds too small for further sorting: 386 (burned), 572, 853 x 2, 1077, 1111, 1136, 1181 x 2.
D1. No line around rim (Pl. 9f)
Open centre blue or red flower. 2 sherds: 527 (burgundy flower), 553 (Pl. 9f, deep blue flower).
D2. Black or red line around rim.
Frag. not further sorted: 940
D2a. Open-centre blue and/or wine flower (Pl. 9b-c); 5 sherds from 2 plates: 572 (Pl. 9b., large burgundy and blue flowers, black stem line, 915 (Pl. 9c) blue flower, black stem line with yellow patch, 915 (same lot as preceding, large red flower only but expect blue also on larger sherd)
D2b. Dot centered blue flowers (Pl. 9a); 842 (also has black stem line, red flower and yellow patch)

E. Red line around rim (no other elements); 48 (Pl. 9g, burgundy colour, on inside)

Unclassified, painted (Pl. 9d); Sherd from mug, extending from rim to near base, has one small light green leaf motif (324a, H3 under sod).

The provenience of these sherds includes several items from the floor of House 12, which likely is an early Reliance phase context. Other contexts include many from the layers in and above House 4, and an uncommon House 3 ceramic, as well as various Feature Pits and Test Pits attributable to the Fort Reliance occupation.

Sherds with Transfer Print Patterns. Except for the two sherds with fine black details, all the printed ware is blue coloured. There are no soft or flow blue prints. The most common and easily recognized pattern is Willow. Other printed sherds have cloud and rosette designs or combination geometric and floral patterns. First listed below are the Willow sherds, including some with potter's marks that are probably Willow ware, followed by the other printed sherds. Too few potter's marks were recovered to make it worthwhile to trace the North American distribution of these British wares. They probably were available from the Alaska Commercial Company warehouses at San Francisco, as was the painted ware. If not, they could indicate other sources of lines of supply.

Blue Willow
- 696a Potter's mark /SEA. /T. (MON) [T is from NEWPORT] (Pl. 9m)
- 696b Potter's mark /PRIMAVH/ /RDIFF/ WPO/ [on 3 lines]
- 601 Probable Willow, potter's mark /CARD/ /NEW/ [on 2 lines, e.g. Cardiff, Newport] (H5 turf)
- 718 (potter's marks only on indicated sherds)
- 741 Probable Willow, potter's mark /Sl &/ [1st line, "/" indicates mark truncated at break], /Sw/ [2nd line] /RT/ [3rd line]
- 764 Small rimsherd
- 1140 x3 burned
- 1155 x2 burned, probable Willow
- 1182 Rimsherd
- 1407 (lot, Pl. 9n-o)

Other Blue
- 371 Clouds pattern, plate or bowl (Pl. 9i)
- 413+383+371 Complex leaf, vine and spiral, bowl rim (Pl. 9l)
- 383 Rosette, clouds, diagonal lines (Pl. 9j)
- 427 Pattern identical to 383, burned
- 383+413 Floral, too little to define
- 1376 Flower (Pl. 9k)

Black
- 781 Bowl or cup, fine-lined black geometric and floral (Pl. 9h)
- 1299 Tea cup handle, possibly same pattern as 781 (Pl. 9h).

These printed sherds come from varied scattered contexts; some are associated with House 7, others are from the sod above House 4 -- a possible late Reliance context with many peculiar distinctions; none are from the semisubterranean house pits.

Other Household Items

Kerosene Lamp Burner Part (Pl. 10o). Perforated brass disc, slotted for the wick extension, that holds the chimney (Feature Pit 3, a House 7 dump). Probable lamp chimney sherds are described

among the glass container (curved glass) fragments.

Pail or Kettle (Fig. 5.1). A complete pail or kettle, minus bail, was found in the entryway to House 1. The specimen is approximately 25 cm in diameter at the top,tapers towards the base which is 19 cm in diameter, and 17.5 cm high. If the iron object were enamelled, no trace of this surface remains today on the surface of rust scale and white powder. The bail and the lugs for its attachment are missing, there being paired holes through the wall where the lugs had been. The top edge or lip, now damaged and distorted, was tightly rolled.

Possibly, then, the last use for this container differed from the way it was employed initially, when it was complete. Recovery of the pail in an upright mode more or less surrounded by fire-cracked rock at the base seemed to indicate that the house entry was its last functional context. However, needles adhering to the base show that the pail was not being heated over a fire in the entry, and the meaning of the association with fire-cracked rock is uncertain. Spruce needles were found adhering to the base of the pail, imbricated and aligned like those on a bough or twig (eg, the pot had rested atop a bough, not loose needles). There also are adhering traces of other vegetal fibres and two tiny patches of apparent fabric a few millimetres in extent.

Pail or Kettle Lugs (Pl. 6b-c). Two types were recovered. One is a simple tab-shaped piece with centered round hole for handle, broken off the top of a pail. The second lug is a thick, galvanized oval plate to which is attached (welded?), at the top a curled, tapered pig-tail/shaped eye. Two rivets were used to attach the plate to the side of a sheet iron kettle or pail, of which a small fragment remains. Its context is a semisubterranean house pit.

Metal Plates (Pl.7a-b). "Pie plate" format (400, 1465, 1466), two nearly intact plates and several rim and side fragments, 2 different varieties, one with higher wall and more rounded bottom edge, 23 cm diameter (surface, post-Fort Reliance age).

Metal Cup (Pl. 6j). Handle only, from metal cup, plated, badly corroded, from a semisubterranean house pit.

Stove Parts (Pl. 7h-i). (a) Cast iron stove grate or damper fragment (1328). (b-c) Heavy ribbed (multiple ridges) plate, larger (1327) and smaller fragments (1003) from the same or similar part. Larger fragment 147 mm in its intact dimension. (d) Other small ribbed fragment with rectangular lug (1359). (e) Cast iron plate, major fragment, may be part of damper (H4 occupation layer). (f) Ribbed plate (1468), 133-mm-long fragment. All could be from the same stove which their Pit 3 and House 4 provenience suggests belonged to the Fort Reliance period of occupation. It is evident that the stoves were for burning wood, but the fragments do not show whether they were space heaters, small cooking ranges, or dual-purpose stoves.

Curved Glass (not illus. except Pl. 9q). There are 45 catalogue lots of curved glass comprising 55 specimens (a few so tiny that curvature is not readily apparent), but some are fragments from

the same container. The collection appears to represent jars, bottles, and kerosene lamp chimneys and possibly other of objects. Because of the risk of breakage during handling and from freezing, there would have been a disincentive to importing products in jars and bottles. Some canned products high in liquid content also needed protection from freezing. To reduce shipping weight, the traders probably sought alternatives to bringing in goods high in water content. Most specimens are too incomplete to allow recognition of bottle or container types, though colour and thickness of the glass and the angulation of corners provide clues to the type of artifact represented. Specific examples are noted below.

Amber-brown, portion of rectangular bottle (liquor?), partial inscription large B followed by possible I, (639).
Clear, colourless, no bubbles, 6.8 mm thick, from globular object (l057). There is a thinner colourless sherd from a bell-shaped object (1243).
Clear, colourless, a small "tab" with raised, curved edge, from potentially identifiable object (l058, found with preceding specimen).
Blue-green clear, very bubbly (blown glass?), has conformation of neck-shoulder area of a bottle, but "neck" wider and thinner than expected (693).
Green to Blue-green clear, straight side edge of objects (medicine bottles?) with concave sides (387, 1059).
Blue-green clear, sherd from object with thin walls, highly concave straight side, side edge that turns abruptly (where broken), probably not from preceding though recovered from same test pit (1075).
Brown clear, cast cylinder with moulding seam, 5.6 mm thick, (liquor bottle?).
Brown clear, neck-shoulder area (liquor bottle?), found with preceding (both 1109) but is thinner, sod-humic zone context could be post-Reliance.
Blue (only blue glass from site), from unidentified object of complex shape, from sod layer (692).
Green, very thick (8mm), cylindrical (liquor or wine bottle?), sod context is same as brown bottle 1109 may be post-Reliance (1110).
Clear, colourless, the slightly concave circular base of an apparent jar, deep trash pit context (1349).
Colourless, turbid, concave straight side? (medicine bottle?) (398).
Cluster of aqua-coloured sherds (Pl. 9q, 1570, 1588). They appear to be from an old bottle that possibly was blown into a mould inasmuch as part of a coarse vertical seam appears to be present. Its thickness is highly variable. The very lip had been attached to the neck as a separate ring of glass. The neck takes on an angular format 5 to 6 cm below the lip.
Thirteen thin, colourless clear. One sherd in this group is a straight-walled cylinder, varying in thickness though 1.4 mm is characteristic, with flange, and evidently was moulded (1369). The flange is suggestive of the remaining portion of the broken out base of a jar or drinking glass, though the "base" would have been no thicker than the sides. It is from a Reliance period context. The remaining 11 clear sherds tend to be thinner, most being in the range rang of 0.9 mm to 1.3 mm, and often are double curved, e.g. curve in more than one direction, in two cases describing concavo-convex surfaces, as would be the case for a globular or expanding area of a cylinder. Under magnification, in oblique light, more or less aligned smoothed grooves or striations can be seen on the surface of many of these sherds--a clue to the fabrication process. The intensity of this feature varies highly between pieces. One has a smoothed edge. Most in this group appear to be fragments of lamp chimneys. The sherds come from various contexts.

The curved glass is associated with structures of the central and northern portions of the site, including test pits located near these features. There also are two specimens each from the turf and shallower layers (above the floors) of House pits 4 and 12, and one large fragment of a flask-shaped bottle from the turf of House 1, all obviously more recent than the period of Fort Reliance. The four aqua-coloured sherds from a single vessel are the only curved glass associated with the living floors of semisubterranean Houses 1, 2, 3 and 12.

AI.3.6. Clothing Complex

Buttons (Pl. 12). Six classes of buttons were recovered in small numbers.

1. Metal snap, female part: pressed composite, plated iron, 14 mm dia. (867, from a mixed context). A rain garment fragment with snaps seen on the surface (top of Pit 2) was not collected.
2. Metal disc (Pl. 12a), 2 specimens, iron 4-hole, pressed composite, raised rim, badly corroded, 16.5-17 mm dial (302, 1161).
3. Metal disc (Pl. 12b), iron, single hole with cross-bar, composite pressed, 16.5 mm dia, 3.7 mm thick. A similar button was recovered in historic levels at Rat Indian Creek in the Porcupine drainage by Le Blanc (1984: Pl. 99k).
4. Paste composition? (Pl. 12c), moulded, 2 holes that converge in a narrow deeply recessed area at the front, 13 mm dia., 3.5+ mm thick, with raised lands on the obverse, decorated with hachure lines across outer land now largely lost due to weathering.
5 Ceramic hemispherical dress button with metal loop eyelet (Pl. 12f), deep brown, 11.2 mm dia. (associated items suggest Fort Reliance phase accumulation).
6. Sew-through milk glass (also called "agate") (9 specimens, 8 varieties). All specimens have (or probably had) 4 narrow holes. Each variety is described below.

A: Translucent White (Pl. 12e)
A1. Centre Not Recessed
Fragment, c 11 mm dia (866, H 12 under turf, context may contain post-Reliance material).

A2. Recess Limited to Immediate area of Holes (Pl. 12e)
Complete, 11.1 mm dia. (288 H 3 unassigned component)
Complete, 9.5 mm dia. (Pl. 12e, 299, 9.5 mm dia., H 3 Fort Reliance phase)
Complete, 10.4 mm dia. 3.0 mm thick (Pl. 12e, 358, H 3 Fort Reliance phase)
Fragment, c 9 mm dia. (1352, TP K Reliance component)
Complete, 10.6 mm dia, 3.14 thick (Pl. 12e, 890 H 12 Fort Reliance phase)
Complete, 9 mm dia. (1108, TP J mixed context?)
A3. Wide Recessed Area on Face
Fragment, originally c 11-12 mm in dia, 3.5 mm thick (1154, TP K Fort Reliance phase).

B: Coloured
Complete, 10.1 mm dia. 3.6 mm thick, colour is a brown-red wash or stain, front is a truncated cone in shape, thus differing from those above (1043, TP F sod-humic mixed Reliance and post-Reliance matrix).

The sew-through milk-glass buttons are not unlike those used on underwear during the 20th century. Military-style buttons are absent although they occur elsewhere in the north as trade goods. The Montgomery Ward 1894-95 catalog and Sears, Roebuck 1908 catalog size buttons by "lines" which are equivalent top the following dimensions:

Lines....	12	14	16	18	20	22	24
Inches...	1/4	5/16	3/8	7/16	1/2	9/16	5/8
(mm.....	6.4	7.9	9.5	11.1	12.75	14.3	15.88)

Some of the Fort Reliance buttons poorly fit these sizes, but I am not aware what this means, either in terms of product standardization or for dating.

Stay (Pl. 12g). Probably a small shirt collar stay, metal (not iron), 71x5 mm.

Boot Part. A complete upper part with pull-up strap and five lacing eyelets for a short boot or work shoe was recovered from the turf and moss layer of House 1. This object belongs to a late event when the housepit was reused.

AI.3.7. Personal Use items

Tobacco Seal (Pl. 12j). A plated metal seal or stamp has a large rased "D" (embossed from the reverse side) that occupies most of 16-mm-diameter disc). A second specimen of this type and size is too badly corroded (burned?) for details to be discerned (1163). Tobacco stamps also have been recovered elsewhere in the northwestern region (cf. Morlan 1972 Pl. 3 m).

Clay Pipes (Pl. 12l-s). There are 38 clay pipe lots (1 is from the eroded river bank) excluding fitting pieces and combining into single lots sherds found in proximity. The minimum number of pipes represented by stem tip segments is 6, though considering the dispersal of the lots among numerous collection units considerably more pipes are probably represented. None is even approximately complete. The longest stem fragment measures 73 mm and there are portions of the bowl, assembled from fragments, that extend from the rim to the base or comprise the entire circumference. The single type present can be seen in illustrations of complete specimens, produced during the early decades of the twentieth century. Similar pipes were produced during the nineteenth century, especially in Scotland, and exported to North America (cf. Walker and Walker 1969).

One bowl has a lightly incised circling groove (Pl. 12o) and several bowl sherds have the stamped or impressed letter "D" (Pl. 12q) or, in one case, an apparent "T" with serifs. Usually the impression is not clear and in some cases the stamp appears to have been drug down from the rim. In one case, instead of being impressed into the clay is raised. One small sherd also shows the possible ends of three radiating lines from another type of marking. Three stem fragments bear the impressions, complete or partial, "GLASGOW" and "McDOUGALL" on opposite sides (Pl. 12 l-m).

The "T D" markings are widespread on pipes of both the 18 and 19th centuries produced in England, Scotland, on the Continent and in the United States (Wilson 1961). "TD" apparently was a common style group to which the present collection can be attributed, made by various firms including McDougall (Walker 1971:31). One list of Glasgow clay pipe makers current to 1892 lists the McDougall operation as active between 1853 and 1881 and again in 1892 (Wilson 1961:133), though Walker and Walker (1969) cite dates of operation extending essentially from the 1840s through 1967. TD pipes exported to the United States after 1891 have SCOTLAND

on the stem to comply with customs regulations (Walker and Walker 1969). As is to be expected, none from Fort Reliance bears this marking. Pipes with the McDOUGALL GLASGOW marking are found in late 19th century sites in Alaska, especially where the inhabitants had access to Alaska Commercial Company goods.

Combs (3) (Pl. 12h). Hard rubber combs are represented by a larger fragment and two teeth from three contexts. The large fragment (84) is from a House 1 fill layer that may postdate the occupation of Fort Reliance but a tooth from the House 3 living floor is proper to the main occupation of that house in Fort Reliance times. Teeth are 2 mm wide at the base and 17.7 mm long on the larger piece, which is in the size range of modern pocket combs. The other teeth (347, 1179) are longer and wider, up to 4 mm. Unlike modern combs, neither the teeth nor the tooth-body juncture have a rounded, moulded configuration, but appear to be cut.

Medallion or Seal (Pl. 12i). This 38-mm-diameter (1.5 inch) object would have decorated a product intended for luxury or personal consumption. The medallion is of copper, plated on the obverse side with a gold-coloured wash. A floral wreath enclosing a lyre-like design the sides of which are zoomorphic raptor- or dragon-headed figures. There are no inscriptions. There is no glue residue or other indication of the original mode of attachment, but two small rectangular tack holes near the margin show that it had been attached (or recycled and reattached) to a wooden object. Later, the disc was treated roughly, probably by the inhabitants of Fort Reliance: there are three holes--one circular and one rectangular and one irregular--that have been punched into the piece from both sides, defacing it for no apparent purpose. The House 7 floor context associates this object with the trader.

Cross (Pl. 12k). This small, semi-finished, hand-made cruciform object is 26 mm high and 21.5 mm wide across the arms. It has been discussed in Chapter 5.

AI.3.8. Untyped Metal Artifacts-Not Cans or Remanufactured from Can Metal

The items described here are among the most distinctive artifacts from Fort Reliance but they are relegated to the present list because I am not able to identify them. Many of these objects come from contexts associated with House 7, the traders' main building and almost all belong to the Fort Reliance phase of occupation.

Thin bar (268) 8± x 140 x 2.5± mm, produced mainly by a single fold (doubling the metal) or by a double fold or tripling the metal some places along edge, of alloy or galvanized metal.

Tube (Pl. 7d). 245 mm long, rolled from sheet, seam is soldered along middle half, one end is crumpled, other end is swedged (slightly folded over from pounding. Diameter before flattening is slightly less than 25 mm.

Brass "strut fragment" (923) with several large irregular size holes roughly punched the length.

Tiny pieces of steel suggestive of the body of a cut nail (which they are not) (86, H1 organic upper layer, post-Fort Reliance; 836).

Unidentified object, as figured (Pl. 10j). This six-sided bell-shaped object undoubtedly will be recognized by some readers, but its identification escapes discovery by the author, its superficial resemblance to a flange or escutcheon used in plumbing fixtures notwithstanding.

Irregular subrectangular fragment of steel or cast iron (523), 14 x 14 x 4[illegible] mm).

Wire object (1146) with two curves, pointed ends, appears to have been intentionally shaped to this form.

Thin metal object with perforated basin, as figured (Pl. 6q), heavily corroded.

Metal strap, eyed at each end (1357), probably forged to this format, about 132 mm long before being folded over on itself, heavily corroded from hearth ash in matrix.

Forged metal bar with "S" bend and twist, ends not intact? (Pl. 6h).

Forged hook or prong-shaped object (Pl. 6i), 85 mm long, squared at shank end, rest of stock is roughly circular in section, highly corroded.

Machine part?, with 3 holes, as figured, highly corroded (Pl. 6m).

Small sheetmetal blade with format of a can opener blade (Pl. 6d). Lacks a sharp edge and appears to have been made by hand; resemblance to can opener blade is coincidental.

Fragment of small forged metal bar with perforation at tapered end, as illustrated (Pl. 6l).

Steel plate (607), cut and forged, 55 x 153 mm with small "tab" extension at one end, $\underline{c}$ 4 mm thick.

Beaten copper artifact or apparatus component with hole for recessed-head screw (Pl. 6a)).

Small L-shaped object or fragment of thick iron strap, 30 mm long, stock 3.3 x 9.5 mm (217).

Foil (discard). Small folded piece of foil, bright silvery colour, distinguishing feature is that the surface is uniformly patterned with very-fine scale punctate impressions (roughly 30 per linear cm) (1142).

AI.4. FAUNAL REMAINS

AI.4.1. General Remarks

Scattered mammal bones, which almost always were fragmented, and rare fish and bird bones were recovered. These were moderately numerous only in the fill of House 12. Bits of calcined bone are common in hearths and where hearth ash has been dumped. Many bone fragments also were picked up along the river shore in 1983, but in 1991 the shore zone was clean. They evidently had eroded out of the bank. The riverbank lot consists primarily of moose and caribou

bones and one beaver femur and is not included in the analysis (Table AI.5). We did not find any discrete refuse dumps. Probably none existed. Most refuse likely was dumped over the bank and subsequently has been swept away by the river. Fish ribs were numerous in the front corner of House Pit 1 but were rare elsewhere in that house and on the site.

The only other food refuse recovered consists of abundant prune pits encountered in the sod at TP H, of which a sample was collected, and eggshells and prune pits in Feature Pit 2 (not collected). These appear to postdate the Fort Reliance period (1874-1886). Also, feces was recovered from the housepit floors.

Because of their fragmentation, only a minor portion of the bones could be identified according to element and species. Most of the unidentified pieces are from large mammals, very probably moose. There also are some unidentified fragments from small and medium sized mammals. Whole bones are uncommon and consist mainly of the hare bones, some moose and caribou carpals and tarsals, the dog ulnae, and the beaver innominate and humerus. Where a number of specimens were collected of the same element usually both proximal and distal pieces are present, from both the right and left sides. In a sense, these data, in Table AI.5, have, an identity of their own, so they have to be interpreted cautiously in view of both the sampling and bone survival in archaeological deposits. For example, Clark (1974: Fig. 12) graphs the distinctively different recoveries of various species at a coastal site. As well, and distinctive of the interior region, moose and caribou bones usually are broken up for the recovery of bone grease. The weight of recovered mammal bone is 11.25 kg (identified bone 7.39 kg; bone not identified not burned, 1.86 kg; bone not identified, calcined or burned 2.00 kg).

A1.4.2. Identification By Species and Element

The species distribution within the site does not appear to be random. Most of the caribou bones were found in House 4, a structure with depressed floor but not a typical semisubterranean house, as also were three of the four bear bones, and the mink or marten scapulae. With three exceptions, the remaining caribou bones come from locations on the northern half of the site, i.e., the area associated with cabin outlines instead of semisubterranean house pits.

Some lynx, one of the few caribou bones not from House 4, and the remaining bear element come from the turf and fill above the floor of House Pit 12, a structure located adjacent to House 4 and presumably within its discard zone, while the lynx mandible is from just under the sod overlying the House 4 depression.

All the beaver come from two test pits and a feature pit filled with trash located next to House 7, the largest cabin foundation on the site.

The three dog bones are divided between the floor of cabin outline 9, in the northern area, and a test pit located between semisubterranean Houses 2 and 3 in the southern area.

TABLE AI.4. ARTIFACTS FROM FORT RELIANCE, DISTRIBUTION BY EXCAVATION UNIT (LEFT)

	Bank	Surf	P 4	P 3	Old col	TP O	TP M	TP L	TP K	TP J	TP H	TP G	TP F	TP E
Indigenous Items (made locally)														
Native copper	.	.	.	.	1	.	.	.	.	.	.	.	.	.
Rough biface	.	.	.	.	.	.	.	.	.	.	.	.	.	.
End scraper	.	.	.	.	1	.	1	.	.	.	.	.	.	1
"Chitho" scraper	.	.	1	1?	.	.	.	.	.	.	.	.	.	.
Bone awl	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Lithic flake/core	3	.	.	1	38	1	64	1	1	36	.	.	3	9
Retouched flake	.	.	.	.	.	.	1	.	.	.	.	.	.	.
Projectile point, chert	.	.	.	.	.	.	.	.	.	1	.	.	.	.
Bone arrow point	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Whetstone	.	.	.	.	.	.	1	.	.	.	.	.	.	.
Birchbark container	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Birchbark, sewn, frag.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unidentified bone object	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Fleshing tool? (eroded)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cobble chopper?	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Chalcedony pebble	1	1	.	.	.	.	.	.	.	.	.	.	.	1
Elongate unworn pebble	.	.	.	2	.	.	.	.	.	.	.	.	.	.
Pecked stone (adz) frag.	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Remanufactured from Imports (made locally)														
Cut metal scraps	2	3	1	4	.	1	1	.	1	.	1	.	.	.
Unidentified metal	.	1	.	.	1	.	.	.	.	.	.	.	.	.
Powder flask, top removed	.	1	.	.	.	.	.	.	.	.				
Metal sheet cut from container	2	4	.	.	.	.	.	.	.	.	.	.	.	.
Sheet metal scoop	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Sheet metal tube	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Large can, stovepipe hole	.	1	.	.	.	.	.	.	.	.	.	.	.	.
Cartridge case, head off	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Euro-American Manufactures														
Trigger guard	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Powder can top, bottom	1	.	1	.	.	.	1	.	.	.	.	1	.	.
Centrefire primer cap	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Lid, percuss. cap can?	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Shot (2 or 3 sizes)	.	.	.	.	2	.	18	.	4	.	.	.	.	.
Musket ball	.	.	.	.	.	.	.	.	.	.	.	.	.	.
.44 cartridge case	.	.	.	.	.	.	.	.	.	.	1	.	.	.
.44-40 cartridge case?	.	.	.	1?	.	.	.	.	.	.	.	.	.	.
30-30 cartridge case	1	.	.	.	.	.	.	.	.	.	.	.	.	.
30-30 British cart. case	1	.	.	.	.	.	.	.	.	.	.	.	.	.
30-06 cartridge case	.	.	.	.	.	.	.	.	.	.	.	.	.	.
22 extra-long cart. case	.	.	.	.	.	.	.	.	.	.	1	.	.	.
12 gauge cartridge case	1	.	.	.	.	.	.	.	.	.	.	.	.	.
16 gauge shotgun case	.	.	.	.	1	.	.	.	.	.	.	.	.	.
Lead, melted blob	1	.	.	6	.	.	.	.	1	.	.	.	.	.
Lead, foil wad	.	.	.	4	.	.	.	.	.	.	.	.	.	.
Wire nail	.	.	.	.	.	.	.	.	1	.	2	1	3	.
Cut nail	.	.	1	71	4	1	25	.	61	1	2	3	2	.
Spike (wire nail)	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Stack, brad, staple	.	.	.	.	.	.	1	.	1	.	.	.	.	.

TABLE AI.4. ARTIFACTS FROM FORT RELIANCE, DISTRIBUTION BY EXCAVATION UNIT (RIGHT)

	TP D	TP C	TP BQ	TP A	H 12	H 10	H 9	H 7	H 6	H 5	H 4	H 3	H 2	H 1
Indigenous Items (made locally)														
Native copper	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Rough biface	.	.	.	.	.	1	.	.	.	.	.	.	.	.
End scraper	.	.	.	1?	.	.	.	.	.	.	.	1	.	.
"Tci-tho" scraper	.	.		1	4	1	.	.	.	.	2	.	1	5
Bone awl	.	.	1	.	.	.	.	.	.	.	.	.	.	2
Lithic flake/core	48	.	12	25	2	.	.	2	6	.	9	1	.	4
Retouched flake	1	.	.	1	.	.	.	.	.	.	2	.	.	.
Projectile point, chert	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Bone arrow point	.	.	.	.	1	.	.	.	.	.	.	.	.	.
Whetstone	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Birchbark container	.	.	.	.	.	.	.	.	.	.	.	1	.	.
Birchbark, sewn, frag.	.	.	.	.	.	.	.	.	.	.	1	.	.	.
Unidentified bone object	.	.	.	.	.	.	.	.	.	.	1	.	.	.
Fleshing tool? (eroded)	.	.	.	.	.	.	.	.	.	.	.	.	1	.
Cobble chopper?	.	.	.	.	.	.	.	.	.	.	1	.	.	.
Chalcedony pebble	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Elongate unworn pebble	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Pecked stone (adz) frag.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Remanufactured from Imports (made locally)														
Cut metal scraps	1	.	.	.	9	9	1	5	2	.	5	3	6	3
Unidentified metal	.	.	.	.	.	.	.	.	.	.	.	.	.	1
Powder can, top removed	.	.	.	.	1	.	.	.	.	.	.	.	.	.
Metal sheet cut from container	.	.	.	.	2	.	.	.	.	.	4	.	2	1
Sheet metal scoop	.	.	.	.	.	1	.	.	.	.	.	.	.	.
Sheet metal tube	.	.	.	.	.	.	.	.	.	.	1	.	.	.
Large can, stovepipe hole	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cartridge case, head off	.	.	.	.	1	.	.	.	.	.	.	.	.	.
Euro-American Manufactures														
Trigger guard	.	.	.	.	.	.	.	.	.	.	1	.	.	.
Powder can top, bottom	.	.	.	.	1	.	.	.	.	.	2	.	.	1
Centrefire primer cap	.	.	.	.	.	.	.	.	1	.	.	.	.	.
Lid, percuss. cap can?	.	.	.	.	1	.	.	.	.	.	.	.	.	1
Shot (2 or 3 sizes)	.	.	.	.	.	.	.	1	.	.	.	2	10	1
Musket ball	.	.	1	.	.	.	.	.	.	.	.	1	.	.
.44 cartridge case	.	.	.	.	.	.	.	.	.	1	.	.	.	.
.44-40 cartridge case?	.	.	.	.	.	.	.	.	.	.	.	.	.	1
30-30 cartridge case	.	.	5	1	.	.	.	.	.	.	.	.	.	.
30-30 British cart. case	.	.	.	.	.	.	.	.	.	.	.	.	.	.
30-06 cartridge case	.	.	.	2	2	.	.	.	.	.	.	.	.	.
22 extra-long cart. case	.	.	.	1	.	.	.	.	.	.	.	.	.	.
12 gauge cartridge case	.	.	.	.	1	.	.	.	.	.	1	.	.	1
16 gauge shotgun case	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Lead, melted blob	.	.	.	.	1	.	.	1	.	.	.	.	1	2
Lead, foil wad	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Wire nail	.	.	.	.	.	1	.	.	.	1	.	2	.	64
Cut nail	.	.	.	1	25	10	2	16	5	.	25	14	4	3
Spike (wire nail)	.	.	.	.	.	.	.	.	.	.	.	1	.	.
Stack, brad, staple	.	.	.	.	.	.	.	.	.	.	.	3	1	.

TABLE A1.4. (LEFT)--continued

	Bank	Surf	P 4	P 3	Old col	TP O	TP M	TP L	TP K	TP J	TP H	TP G	TP F	TP E
Screw (wood, machine)	.	.	.	.	.	.	1	.	1	.	.	.	.	.
Wire	.	.	.	1	.	.	.	.	1	.	.	.	.	.
Strap iron, perforated	.	.	.	.	.	.	.	.	.	.	.	.	1	.
Snap (clothing fastener)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Button, metal	.	.	.	.	.	.	.	.	1	.	.	.	.	.
Button, milk glass	.	.	.	1	.	.	.	.	1	1	.	.	1	.
Button, other, back loop	.	.	.	1	.	.	.	.	.	.	.	.	.	.
Button, ceramic not glass	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Button, mother of pearl	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Boot upper, leather	.	.	.	.	.	.	.	.	.	.	.	.	.	.
File	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Knife blade, iron	.	.	.	1	.	.	.	.	.	.	.	.	.	.
Cup handle, metal	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Dish, pie pan, metal	.	2	.	.	.	.	.	.	.	.	.	.	.	.
Cans (food containers)	1	13tp.		1	.	.	.	.	.	.	.	.	.	.
Cigarette can	.	1	.	.	.	.	.	.	.	.	.	.	.	.
Tobacco seal "stamp"	.	.	.	.	.	.	1	.	1	.	.	.	.	.
Stove pipe	.	x	.	.	.	.	.	.	.	.	.	.	.	.
Stove cast iron frag.	.	1	.	3	.	.	.	.	.	.	.	.	.	.
Crucifix, small, metal	.	.	.		.	.	.	.	.	.	.	.	.	1
Comb tooth, hard rubber	.	.	.	.	.	.	.	.	1t	.	.	.	.	.
Awl? iron	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Chisel	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Pot handle lug	.	.	.	.	.	.	.	.	1	.	.	.	.	.
Metal foil, not lead	.	.	.	.	.	.	.	.	1	.	.	.	.	.
Unidentified metal	2	.	.	5	.	.	.	.	.	.	.	.	.	.
Gun or machine part	.	.	.	2	.	.	.	.	.	.	.	.	.	.
Oil lamp burner part	.	.	.	1	.	.	.	.	.	.	.	.	.	.
Scissors	.	.	.	1	.	.	.	.	.	.	.	.	.	.
Chain links	.	.	.	2?	.	.	.	.	.	.	.	.	.	.
Ice skate	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Flue stopper	.	1	.	.	.	.	.	.	.	.	.	.	.	.
Rubberized? fabric	1	.	.	2	.	.	.	.	.	.	.	.	.	.
<u>Ceramics</u>														
Cup handle	.	.	2	.	.	.	.	.	.	.	.	.	.	.
Plain (white)	27	.	.	.	4	.	.	.	3	.	.	.	.	.
Painted	10	.	.	.	6	.	.	.	7	1	.	6	.	.
Transfer	18	.	.	1	2	.	.	.	5	.	.	.	.	.
Coarse black	.	.	.	.	.	.	.	.	.	.	1	.	.	.
Comb. Transfer+Painted	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Flat (sheet) glass	5	.	.	10	.	1	53	2	93	2	19	32	.	.
Rounded glass/bottle	41	.	.	6	.	.	3	2	2	10	.	4	.	.
Beads	3	.	.	38	230	16	1438	8	42	.	4	11	3	4
Clay pipe frag	2	.	.	2	5	1	4	1	5	.	.	.	.	.
Coarse (earthenware?)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cupel for assaying	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Fish bones	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Other bones	x	x	.	x	.	x	.	.	x	.	.	x	.	.
Fire-cracked rock	x	.	.	.	.	.	.	.	.	.	.	.	.	.

Several test sections are not shown because of their low yield: House 8 -- cast iron fragment (kettle?). House 11 section, and Feature Pit 1 -- sterile. TP N -- nearly sterile. TP P (flag pole) -- 6 lithic flakes, 1 powder can bottom,

TABLE A1.4. (RIGHT)--continued

	TP D	TP C	TP BQ	TP A	H 12	H 10	H 9	H 7	H 6	H 5	H 4	H 3	H 2	H 1
Screw (wood, machine)	.	.	.	.	.	.	.	.	.	.	.	m1	.	w1
Wire	.	.	.	.	.	.	.	.	.	.	1	1	.	2
Strap iron, perforated	.	.	.	.	.	.	.	.	.	1	3	.	.	.
Snap (clothing fastener)	.	.	.	.	1	.	.	.	.	.	.	.	.	.
Button, metal	.	.	.	.	.	.	.	.	.	.	.	.	.	1
Button, milk glass	.	.	.	.	2	.	.	.	.	.	.	3	.	.
Button, other, back loop	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Button, ceramic not glass	.	.	.	.	1	.	.	.	.	.	.	.	.	.
Button, mother of pearl	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Boot upper, leather	.	.	.	.	.	.	.	.	.	.	.	.	.	1
File	.	.	.	.	.	1	.	.	.	.	.	.	.	.
Knife blade, iron	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cup handle, metal	.	.	.	.	.	.	.	.	.	.	.	1	.	.
Dish, pie pan, metal	.	.	.	.	.	.	.	.	.	.	1	.	.	.
Cans (food containers)	.	.	.	.	1	.	.	.	.	.	2	1	.	1
Cigarette can	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Tobacco seal "stamp"	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Stove pipe	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Stove, cast iron frag.	.	.	.	.	.	.	1	.	.	.	.	.	.	.
Crucifix, small, metal	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Comb tooth, hard rubber	.	.	.	.	.	.	.	.	.	.	.	1t	.	1
Awl? iron	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Chisel	.	.	.	.	.	.	.	.	.	.	.	3	.	.
Pot handle lug	.	.	.	.	.	.	.	.	.	.	.	.	1	.
Metal foil, not lead	.	.	.	.	.	.	.	.	.	1	.	.	.	.
Unidentified metal	.	.	2	.	.	.	.	.	2	1	.	.	.	.
Gun or machine part	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Oil lamp burner part	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Scissors	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Chain links	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Ice skate	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Flue stopper	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Rubberized? fabric	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Ceramics														
Cup handle	.	1	.	.	.	.	.	.	.	.	.	.	.	.
Plain (white)	.	.	.	.	16	3	1	1	.	1	3	1	.	1
Painted	.	.	.	.	8	1	.	.	.	.	15	3	.	1
Transfer	.	.	.	.	1	3	2	.	.	1	9	.	.	.
Coarse black	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Comb. Transfer+Painted	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Flat (sheet) glass	.	.	.	1	12	3	.	18	9	1	44	2	2	7
Rounded glass/bottle	.	.	.	.	3	1	2	3	2	.	2	.	.	6
Beads	2	55	14	25	195	40	14	563	12	3	81	175	204	127
Clay pipe frag	.	.	.	1	.	6	.	.	.	.	1	1	8	4
Coarse (earthenware?)	.	.	.	.	.	.	.	.	.	.	.	.	1	.
Cupel for assaying	.	.	.	.	.	.	.	.	.	.	3	2?	.	.
Fish bones	.	.	.	.	.	.	.	.	.	.	.	.	.	x
Other bones	.	.	x	x	x	x	x	.	.	.	x	.	x	x
Fire-cracked rock	.	.	.	.	.	.	.	.	.	.	.	.	x	x

can peel strip can (post-Reliance), 1 flat sheet glass, 2 beads (white, green lined Cornaline), fire-cracked rock. Old TP expanded -- 2 brads, seed bead. Feature Pit 2 -- post Reliance (and possibly post-Gold Rush) material not collected.

The two red squirrel bones are from the floor of House pit 1. Few mammal bones other than moose were found on the floors of semisubterranean Houses 1, 2, 3 and 12. Exceptions being the two red squirrel bones, two caribou bones, some hare, and a large wolf ulna.

The porcupine mandible fragments are from Test Pit P, the "Flag Pole" test pit.

The greatest variety, thus, is associated with the cabin outlines, presumably occupied by miners and the traders, with the sunken floor of House 4 for which there is evidence of complex or multiple occupation by both Natives and miners, and with the turf above House 12 which is located next to House 4. The very limited occurrence of fish bones and scales suggests, among other things, that the Fort Reliance banktop location was not the site of fish cleaning or processing. This is to be expected, since fish processing most likely would have taken place elsewhere close to the water and across at Nuclaco.

Moose is the most common taxon, both in terms of elements recovered and weight of meat represented, while caribou is next in terms of potential meat. In terms of elements represented, though, hare is next to caribou in abundance. The dominance of moose over caribou differs from faunal frequencies at many subarctic interior sites reported from Alaska, but is in accord with the historically recognized abundance of moose in the vicinity of Dawson and Fort Yukon. Adney (1900a) reported that 80 moose and 56 caribou were killed on one extended hunt that took place at the end of the nineteenth century in the vicinity of the Klondike River and its North Fork. Caribou also is a prominent resource of the Fortymile and Dawson region. Few beaver and no muskrat are present among the remains. There are two likely reasons for this: beaver and muskrat habitat, favoring small streams and numerous small lakes, is poorly developed near Fort Reliance, and proper Native disposal practice would see the remains of these animals returned to the water. The recovery of faunal remains represents exceptions to the rules, for which there are many examples in the archaeological record, or slow responses on the part of housekeepers.

TABLE AI.5. IDENTIFIED FAUNAL REMAINS*

Element	Moose	Caribou	Hare	Beaver	Lynx	Bear	Dog	Wolf	Mink	Red squirrel	Porcupine
	Alces alces	*Rangifer tarandus*	*Lepus amer.*	*Castor can.*	*Lynx can.*	*Ursus amer.*	*Canis fam.*	*Canis lupus*	*Mustela vison*		*Erethizon dorsatum*
Mandible	2	1?**	8		1					1	2***
Hyoid	3										
Cranium	6		3								
Antler	0	0									
Scapula	3+4?	1+1?	3	1					1?		
Humerus	2+?1		6	1		2					
Radius	1+?1		7		1	1	1				
Ulna/ Radius-Ulna	5+1?	2	4		1		2	1			
Vertebra	4		6								
Sacrum	2										
Rib	20+	x	x?		1						
Sternum		1									
Innominate	5+7?		5	1							
Femur	4+3?	2+1?	10	1	1?					1	
Tibia or tib-fibula	4	3	7								
Subtotal	78	10+3?	59	4	4+1?	3	3	1	1	2	2
Metacarpus	2	1									
Metatarsus	4	2	7 (longer bone)								
metapodial	2										
Carpals & tarsals	8	4									
Calcaneus	4	1	5								
Astragalus	3	0									
Phalanges	25	4	xx		1	1					
Sesamoids	9	3									
Total	135	26+3?	71	4	6+1	4	3	1	1	2	2

* There are 20 problem specimens, not counted, involving distinctive bones that nevertheless could not be identified.
** A question mark after the number indicates uncertainty for species; before the number it indicates uncertainty for element. The mink scapula, if not that species, is marten. Portions of very large caribou ribs possibly may be misattributed to small moose. Many minor rib fragments probably moose or in the overlapping moose-caribou range have not been counted. No attempt was made to identify small rib fragments.
*** A right and left pair, burned fragments.

APPENDIX II: BEADS DESCRIPTION AND ANALYSIS

AII.1. INTRODUCTION

Trade beads are dealt with separately from other artifacts in Appendix I because of the emphasis on spatial distributions, as shown by the various lots compared. The object of this is to fine-tune the chronology of the site as it appears to be reflected in changing bead preferences, and to segregate Native user distributions from that which reflects primarily the trader's stock.

Beads (Pl. 13) are numerous, locally sensitive to temporal changes, and to some degree indicate ethnicity. In Table AII.8 a total of 3207 beads is entered, but the number available for the analysis (Table AII.1) is somewhat less due to disintegration (some were observed and counted but not recovered). In this section we reverse the conventional order of discussion and description because of the broad interest that may be attached to the first and the specialized nature of the descriptive and distributional data.

A primary classification of beads sorts them by manufacturing process. Most beads in the present collection are drawn tumbled beads, which are smoothed or partially remelted segments of canes. Wound and moulded beads also are present in small numbers. Both moulded and larger cane beads may have facets, though facetted beads are uncommon at Fort Reliance. Drawn (cane) beads can be sorted, classified or described by a number of attributes, not all of which will be mentioned here because the collection lacks examples with certain attributes. Some attributes are discrete (present or absent). Others occur by degrees, rounding and size for instance. Size is important for classification, seed or very small beads being those under 2 mm, as measured parallel to the perforation. Often it is not a single attribute alone but the combination of attributes in a bead that is significant historically. Too, relative frequency may be significant. For instance, the changing proportion of seed beads to larger sizes has especial pertinence to changing modes of bead use. One attribute especially useful in the present analysis is the layering of the glass to produce clear-lined and white-lined drawn beads whose changing proportionate distribution reflects changing nineteenth bead century supply. A consideration of colour shows distinct preferences. Some colours almost never are present. Composition of the glass leads to the recognition of additional subtypes, especially when composition is reflected in different weathering of beads that look similar when they are fresh.

AII.2. DISCUSSION AND CHRONOLOGICAL SIGNIFICANCE

Glass beads are one of the more useful artifacts recovered at Fort Reliance in terms of the information to be learned through their analysis. Beads are numerous, provide several attributes

for analysis, and Fort Reliance was occupied briefly during a period in which of bead use was changing.

TABLE AII.1. OCCURRENCE OF BEADS BY CLASS

Class	Number	Percent
Dentalium	2	0.062
Moulded, blue	6	0.19
Facetted, large	6	0.19
Wound	46	1.45
Tube-pony sizes	1482	46.23*
Tube-intergrade	826	25.83
Tube-very fine	836	6.08
Total	3206	100.01

* Tube also are called cane or drawn beads, pony sizes are small and larger; also called pound beads; very fine is equivalent to seed beads.

The tiniest beads often are called seed beads, but it is more objective to refer to them as very small beads. Not all archaeologists define seed beads in the same manner, some using that term for both very small and small beads, but in many instances they find that the very small group can be separated from others as a discrete size population.

The occurrence of seed beads in large numbers and the white-lined cornaline d'Aleppo (or d'Allepo) type are important time markers, either separately or as co-occurring varieties. A light-blue ("robins' egg",turquoise), spherical, wound bead occurs in many western sites, including Fort Reliance. This bead is early in coastal sites (de Laguna 1956; her "Cook" type), but production and use of these beads persisted for another century. Nevertheless, research may confirm my impression that there are differences in the composition of the glass used for early and late beads which shows up in their weathering.

On the use of beads at Eagle (Belle Isle, near Johnny's village, 90 miles below Fort Reliance) Schwatka observed in 1883:

> They evidently care vary little for beads as ornaments, for I saw none of them wearing that much coveted Indian ornament, while great quantities were scattered around by the trader's store, having been trampled into the ground. At no place on the river did I find such an eagerness for beads as characterizes the American Indians of milder climes, but nowhere did I see such total disregard for them as was shown here (Schwatka 1894:260).

At Test Pit M (Table AII.3), located some distance north of the large trader's building, we found a large number of beads on the surface, which suggests a situation parallel to that observed around the store at Eagle, that someone had discarded an accumulation of beads there.

Schwatka's information would be more useful if he had recorded whether beads were used for embroidering clothing and accessories like moccasins and gun cases. Nelson's photograph (Fitzhugh 1983:27) of a Forty Yukon Indian in beaded finery, about 1880 and a photoengraving of Tanana Indians published by Allen (1887: Fig. 19) suggests that that embroidery in beads already was well underway in the region. However, one would not expect to see much bead ornamentation on the clothing worn during the summer, especially at fishing camps, much of which was of European or American manufacture. When he visited Fort Reliance a few days after Schwatka had floated by, Rev. Sims wrote that "there ware some regular savages here from [six days boat travel] above, adorned with beads and with rings in their noses and tattooing on their chins" (Wesbrook 1969, emphasis mine). Does this mean that the Han at Reliance were less "savage" and less adorned than the visitors (who might have been Upper Tanana Indians), or that Schwatka's remarks are typically incomplete?

Osgood, in responding to this information, proposed that beads in the monetary sense had become passé, but that "for decoration, the interest in beads apparently rose again because they were easier to use than porcupine quills" (1971:131) (see also Kretch 1987 on an early Gwich'in fixation on accumulating wealth in beads). Any renewed interest in beads occurring after as late a date as 1883 would have been in seed beads which in fact had come into use by that time for beaded embroidery of clothing and accessories.

Both seed (very small) and larger beads are present at Fort Reliance, but these show a differential distribution with only larger beads (especially "pony" size tube beads) being present in three of the semisubterranean houses. This distribution suggests that occupation of Fort Reliance spanned a critical or transitional period in bead use. The evidence from that site might be used to further examine Schwatka's and Osgood's remarks and suppositions. Very small (seed) beads do not appear in most Alaskan sites until after the Russian period (effectively terminated in 1868) and in fact they are just barely represented in Koyukuk River houses which date to approximately 1880 A.D. (or sometime between 1870 and 1890) (author's data). At that time mainly larger beads were in use. The same pattern appears to be present at Fort Reliance. Seed beads, and also white-lined cornaline d'Aleppo beads appeared in the Yukon drainage with the advent of American traders, and possibly not until the mid- to late-1870s in western Alaska. There is evidence that these beads came into use earlier in the Mackenzie drainage, specifically on a garment collected about 1859-1862 on the Peel River by B.R. Ross of the Hudson's Bay Company. However, clothing collected by R. Kennicott in 1860-62 from the northern Yukon territory and in 1866-68 by W.H. Dall from the middle Yukon drainage is decorated only with earlier style beads (Ethnographic collections in the U.S. National Museum and Canadian Museum of Civilization were examined by A. McFadyen Clark and D.W. Clark.).

AII.3. DISTRIBUTION BY COLOUR (TYPE) IN VARIOUS AREAS OF THE SITE

Table AII.1 shows the frequency of various classes of beads, utilizing the data in Table AII.8.

Drawn beads were sorted into seed and other size groups and counted by colour (Table AII.2). These data will be used for later comparisons. There are six colours to note. Half are blue, a quarter are white, the two varieties of red cornaline amount to one-tenth, and black which was popular at some localities in the north was the least popular at Fort Reliance. Pink-mauve, which is very small in size, presents a special case because it is strongly represented in two excavation units (TP M and H 7) and because in size it poorly sorts between seed and pony size beads (Table AII.3). House 7 is the trader's cabin and TP M appears to be a dump of trading stock.

TABLE AII.2. DISTRIBUTION OF BEADS BY COLOUR, WHOLE SITE

Type/Colour*	Number	Percent	Notes
Blue	1172	50.8	
Blue wound	17**	0.7	
White	596	25.8	c 14 long cylinder
White wound	20**	0.9	19 halves, 3 whole + 3 halves initial
Pink-Mauve	161	7.0	
White-lined red (Cornaline)	146	6.3	18 are long cylinder
Black	101	4.4	5 are long cylinder
Clear-lined red (Cornaline)	93	4.0	4 are long cylinder
	2306	99.9%	

* Excluded from the sample are the pressed and facetted beads and 615 seed beads as classified by an assistant who did the other beads in this table. His sorting differs somewhat from what of the author who counted 836 seed beads.
** Table AII.8 counts each half as one; here halves are counted as half a bead, hence the difference between the tables.

In the Test Pit M lot, blue beads, most of which are smaller than the customary pony bead, also are atypically abundant. Here, too, the relatively localized small red bead is prominent. The moderate abundance of very small beads is noteworthy.

There are two other lots with characteristics more or less comparable to Test Pit M: the initial (prior to 1983) unprovenienced collections, and the House 7 (trader's cabin) test. From the initial, unprovenienced collection and House 7 test pit there are the beads listed in Table AII.3. The House 7 lot is distinctive compared with the south end of the site not only for its high incidence of light red glassy and mauve beads but also for the fact that here seed beads outnumber others nearly 3 to 1.

The three lots described in Table AII.3, from TPM, House 7 and from pre-1983 collection are interpreted as trade lots, ones that have not actually circulated or been put into use. These three

TABLE AII.3. DISTRIBUTION OF BEADS BY COLOUR TYPE, TEST PIT M, UNPROVENIENCED LOT AND HOUSE 7

Type/Colour	Test Pit M Number	%	Unprovenienced Number	%	House 7 Number	%	Remarks
(All size categories, above combined with seed beads)							
Blue	882	61.5	109	49.3	127	22.2	Some corroded turquoise, most H7 are seed
Blue wound	8	0.5	7+	3.2	0	---	Some fragmented
White, yellow-white	160	11.2	35	15.8	182	31.8	Most from H7 are seed
White-wound	8	0.5	3+	1.4	0	---	In fragments
Pink-mauve	166	11.6	31	14.0	181	31.6	Very small and small
Light red	108	7.5	27	12.2	73	12.7	All seed, slightly amber
White-lined cornaline	63	4.4	3+	1.4	9	1.6	All at H7 and 1 other are seed, 18 are long cylinder
Black	36	2.5	3	1.4	0	---	
Clear-lined	3	0.2	0	---	0	---	No seed present
Colourless	0	---	0	---	1	0.2	Seed
Other (bleached)	0	---	2	0.9	0	---	
Yellow-amber	0	---	1	0.45	0	---	Facetted tube
	1433	99.9*	221	100.05	573	100.1	

* 14.8% are seed (2 mm and less), 85.2% are larger.

lots combined (Table AII.4 2nd col. from right) have the following configuration: they retain the distinction of a low incidence of black beads (1.6%) and high incidence of blue, the light red seed and small pink-mauve beads. Although white-lined cornaline d'Aleppos are not abundant, the scarcity of clear-lined cornaline beads suggests a relative late age which, may correlate with the time when the trading post was abandoned. Of the combined bead sample from these three lots, an appreciable percentage (about 660 beads or 29.7%) are very tiny seed beads which also is an indication of a late 19th century date.

This "trader's" collection will be compared and contrasted with that from the south end of the site incorporating the semisubterranean house pits House 1 through 4 and House 12, plus the sparse recovery of 8 beads from TP D, E and F. These are listed by three subcomponents inasmuch as House 12 has features suggesting that it may be slightly older than others, and the artifacts occurring in House 3 suggest a more recent age (Table AII.4). The column order (H-12, Other and H-3) thus is intended to reflect the chronological sequence. The main distinction of House 3 is that most of the beads are very small (seed), including the pink-mauve type. House

12 has a relatively high incidence of black beads and low frequency of white-lined cornaline d'Aleppo and seed beads. In this south-end semisubterranean house group, compared with the proposed trader's group, there is a very strong increase in the incidence of white beads and black, though black remains relatively uncommon; a decrease in blue and in pink-mauve; and an increase in cornaline d'Aleppo, especially in the clear-lined beads is evident as well.

TABLE AII.4. BEAD COLLECTION FROM SEMISUBTERRANEAN HOUSE PITS

Type	H 12	Other	H 3	Total No.	%	Comments
Blue	11*	77*	90	178	22.2	All H3 but 1 are very small
Blue wound	4	8	1	13	1.6	
White, yellow wh.	127	222	54	403	50.2	42 H3 & 4 Other are very small
White wound	0	0	0	0	0	
Pink-mauve	0	1	15	16	2.0	All H3 are very small
Light red	0	1	0	1	0.1	
White-lined	1	55	9	64	8.0	
Clear-lined	20	54	1	75	9.3	
Black	33	14	0	47	5.9	
colourless	0	0	2	2	0.25	Seed
Clear faint rose	0	0	3	2	0.25	Seed
	196*	432**	175***	803	99.8	

* Includes a single blue very small bead.

** There also are 3 rectangular blue moulded. *** There are 152 seed and 23 others.

There remains, for Fort Reliance one area comparison to be made: the distribution at the north end and in the central area of the site. Spatially, this group overlaps with the so-called trader's lot, but the latter has a different etiology. Because of their close association with House 7, the TP K and Feature Pit 3 lots are excluded from the next tabulation in Table AII.5. A large number of units is represented, but collections tend to be sparse.

The north and central area data are compared with the south area and Trader's lot in Table AII.5. The objective of this comparison is exploratory, to see if there are differences between various areas of the site. Here, as in the case of the south-end distribution, white is the most common colour and black is next, but not abundant. This is the only area of the site in which black is strongly present. The two areas thus are not identical but nevertheless group when contrasted with the Trader's lot. For a summary and comparison, all the percentages from three areas are brought together in Table AII.6. For the comparison discussed in the next section, data from another region of the Yukon drainage also are given in Table AII.6.

TABLE AII.5. NORTHERN AND CENTRAL AREA BEADS, EXCLUDING TRADER'S LOT

Type	Number	Percent	Comment
Blue	20	11.1	5 are very small
Blue wound	0	0	
White	117	65.0	2 are very small
White wound	0	0	
Pink-mauve	4	2.2	
Light red	3	1.7	
White-lined	8	4.4	1 is very small
Clear-lined	3	1.7	
Black	25	13.9	
colourless	0	---	
	180	100.0%	4.4% very small (seed)

TABLE AII.6. BEADS FROM THREE AREAS OF FORT RELIANCE AND THE KOYUKUK RIVER, ALASKA, COMPARISON OF PERCENTAGES

Type	N & Central	S Area	Trader's Lot	Koyukuk
Blue, aqua & seed	11.1	22.2	50.2	37.0
Blue wound	0	1.6	0.7	0.1
Green	0	0	0	0
Clear green wound	0	0	0	tr
Purple	0	0	0	2.0
Purple wound	0	0	0	0.2
White & yellow-white	65.0	50.2	16.9	6.3
White wound	0	0	0.5	0
Pink-mauve, seed	2.2	2.0	17.0	tr
Light red	1.7	0.1	9.3	0
Light red conical	0	0	0	0.35
White-lined	4.4	8.0	3.4	10.6
Clear-lined	1.7	9.3	0.1	15.6
Black	13.9	5.9	1.6	27.9
colourless seed	0	0.25	0.045	0
clear faint rose seed	0	0.25	0.045	0
Amber-yellow tube	0	0	0.045	0
	100.0%	99.8%	99.83	100.05%

AII.4. EXTERNAL COMPARISONS

We have seen that Fort Reliance does not have a single characteristic bead profile, but has several. Comparisons with bead distributions elsewhere may be pertinent to understanding these differences. One comparison is made above, in Table AII.6, with sites located in the vicinity of Allakaket on the Koyukuk River in northwestern Alaska (A. Clark 1994). This comparison is relevant inasmuch as the Koyukuk beads were recovered from semisubterranean houses approximately contemporaneous with Fort Reliance, and in both instances most of the beads probably were supplied through the Alaska Commercial Company, possibly using some stock from the former Russian American Company. Although the bead types from the Koyukuk River are largely the same as those from Fort Reliance, shifts in popularity are evident in the higher incidence of black and cornaline d'Aleppo beads and lower frequency of white in the Koyukuk houses. Some beads present in one area are lacking in the other, the Koyukuk purple-black for instance. There is only a single pink-mauve specimen in the Koyukuk assemblage, and the Fort Reliance light-red type is absent. The Koyukuk sample contains only 0.9 percent seed beads, which is lower than the incidence of seed beads at Fort Reliance. The precise date for abandonment of the Koyukuk houses is not know, possibly they overlap only the early part of Fort Reliance and this could partially explain the differences.

A. Clark (1994) gives comparisons for a range of sites, including Russian American and other Alaska Commercial period sites (the sample is Russian Three Saints and Rolling Bay combined, Russian Chirikof Island, the Koyukuk Houses, Akulivikchuk, Tikchik, Crow Village, Kijik, Fort Reliance S. end, and a southern Yukon site JjVi-1). Those data reinforce the picture of variability or even radical shifts in use of the most common colours: white, blue, black, white-lined and clear-lined Cornaline d'Aleppo. At nine sites compared, white is the most popular, being first in abundance at six sites; blues (a highly varying colour lot) are next, though most popular at only one site; the two red varieties of cornaline d'Aleppo when grouped are third, though they are not the preferred bead at any site; then there is black and finally purple.

Two trends, that also have attracted the notice of other investigators, are apparent from the data surveyed. Both very small seed beads and white-lined Cornaline d'Aleppos increase in frequency through time. Seed beads probably are absent in Alaska at the beginning of the 19th century and do not become abundant until the last decades of the century. With a few exceptions they are the only size used today. For the first half of the century there apparently were no white-lined beads in the Yukon basin and other parts of Alaska, although Oswalt attributes white-lined beads to Russian layers at Kolmakovskiy (Oswalt 1980: Appendix II). During the period when Fort Reliance was occupied, white-lined beads were moderately abundant but clear-lined cornaline d'Aleppos continued in use, either as heirlooms (on old beaded artifacts) or as old trader's stock, probably the former considering the low incidence of this type in the so-called Trader's Lot described above.

An examination of ethnographic specimens corroborates these trends. Athapaskan garments were examined at the Smithsonian Institution in 1972 by A. Clark and the writer. Several pieces can be identified with collectors who were in the area during specified periods. Garments, accessories and dolls collected by Dall (in 1866-1868) from the Lower Yukon River Koyukon (cf. Duncan 1987) and by Kennicott (in 1860-62) from the Kutchin of the northern Yukon Territory

(Lindsay 1993), possibly represent, respectively, Russian and Hudson's Bay Company sources. They have the following beads: blue, white, black, purple-black, translucent pink-red or salmon, and clear-lined red (or garnet) cornaline d'Aleppo. There are no seed beads in this group. Most could be described as old-style pony beads, and to a very substantial degree they coincide with the larger drawn tube beads from Fort Reliance and even more so to those from the Koyukuk River and Russian-period sites of southcentral Alaska.

Objects collected later by Nelson (in 1880) and Turner (in 1874-1881, probably specifically in 1874-76) in western Alaska and a single piece obtained through B.R. Ross, of the Husdon's Bay Company, between 1859 and 1862 from the Peel River, Canada, also have some of the old-style beads noted above. In addition, there are tiny (very small, i.e., seed) clear-lined cornaline d'Aleppo beads on a Nelson piece, white-lined Cornaline d'Aleppos on specimens from all three collectors, and dense, "hard-coloured" opaque seed beads on an Innoko River shirt collected by Nelson. A slight degree of translucency, especially common to earlier blue, aqua, purple and white beads, makes the colours "soft." In the white and the blue beads the softness is due to layering with clear glass on the exterior (Frances 1988).

The Kennicott and Dall items suggest that prior to 1867 neither seed beads nor white-lined cornaline d'Aleppo beads were used in the greater region essentially comprising the Yukon drainage. Ten years later, in the Nelson and Turner collections, we find both of these types. Possibly the change is correlated with the advent of American traders, although there always had been alternative sources for trade goods. The presence of white-lined cornaline d'Aleppo beads on the early Peel River shirt may represent an early diffusion westward from regions to the east and south where this variety appeared earlier than it did in Alaska. Information on the adoption of white-lined and seed beads in the Yukon drainage, including the Fort Reliance data, confirms and reinforces similar conclusions regarding the history of these bead types reached by Crowell for the Russian Three Saints site (Crowell 1992) and Ketz in his analysis of a later assemblage from Paxson Lake, Alaska (Ketz 1983), while the present writer suggests that distinguishing features of later assemblages can be tied closely to the arrival of Alaska Commercial Company stock.

AII.5. DESCRIPTION OF CANE BEAD TYPES AND SUBTYPES

Cane (tube) beads often are classified according to whether the edges of the cut tube are rounded (through tumbling and partial remelting) or are fresh and sharp. Ketz (1983:157) found that problems arose in attempting to follow this classification and I have found the distinction inappropriate for most collections I have examined. Fresh breaks at the ends characterize late, transparent cane beads that are more characteristic of the 20th century and last decade of the 19th century. In the Fort Reliance collection there are two yellow hexagonal tube beads of this type. Some of the long tubular specimens also are very lightly tumbled. All the remaining drawn beads have been tumbled, at least to some degree. Crowell (1992), too, notes that in an early Russian period collection from Three Saints Bay on Kodiak Island there are only two beads that have not been tumbled. Ketz (1983) also finds a continuum of shapes. The tube beads are variously barrel (short cylinder) to spherical to doughnut-shaped. A continuum notwithstanding, these shape terms are useful in characterizing subvarieties and the standardization of assemblages.

AII.5.1. White Beads

Two major types of white cane beads are identified by analysts: opaque white, and clear glass over white (opaque white over opaque white also has been proposed). The clear-over white is the most common bead in the early Russian period Three Saints assemblage (Crowell 1992) and continues to be present late in the nineteenth century at Paxson Lake. Ketz (1983:61) comments on the difficulty of distinguishing this type at Paxson Lake but notes that broken examples clearly show the layering. In the present analysis layered white and colourless (colourless glass outer layer) beads were recognized among weathered and broken specimens by examining the ends or breaks. On this basis, only a minority of the white beads clearly appear to be layered.

Three characteristic colours are (a) a "hard", slightly, off-white opaque with enamel lustre which is very uncommon, (b) a soft, translucent, weak or thinned "watered down" white that also is uncommon, and (c) a dull, frosted, sugary bone of grey white. Intergrades exist. The dullness evidently is due to weathering or semimicroscopic pitting. Less weathered specimens retain some degree of lustre. The dirty appearance of many in this group actually is due to dirt in the pits or adhering to the surface, and the appearance of the beads can be improved through cleaning.

In size, white beads show considerable variance, ranging from 2 mm and less up to 10 mm, as measured parallel to the perforation. The most common half-mm size interval is 3.5 to 4 mm, but the 3-3.5 interval and the range from 4 mm to 7.5 mm also are common (Fig. AII.1). Relative to some tumbled cane bead populations from Alaskan sites and certain other colours from Fort Reliance, the white beads in the Fort Reliance collection tend to be large.

Most beads retain some vestige of their drawn or tube ancestry by their slightly cylindrical format. The shape thus ranges from rounded cylindrical, usually termed "barrel-shaped" (very common) to spherical (perfect spheres are rare) to doughnut-shaped. Most appear to have been tumbled to a high degree. There is a small group of elongate cylinders or tubes 6.8 to 7.4 mm long that appears to have been intentionally produced in that format. In many cases glass tubes were broken irregularly or at an angle, and, even after tumbling this resulted in irregularly-shaped beads.

AII.5.2. Yellow Beads

There is an appreciable number of pale yellow or light mustard coloured seed beads. Many of these appear to be an actual colour variety and not a weathering tone for some white beads, though in most instances I have combined the two.

AII.5.3. Black beads

The black bead format closely parallels that of the white beads, though here we do not have the layered varieties and colour variations. Exteriors are dull, again the obvious result of weathering, and the rare less weathered specimens presents a lustrous, black, enamel-like surface. As may be expected from the smaller sample, the size range is less than that of the white beads, but there appears to be more standardization in the black lots. Characteristic sizes fall into two clusters in which representative examples are 2.7 long x 3.5 mm wide, and 5.7 long x 6.9 mm wide.

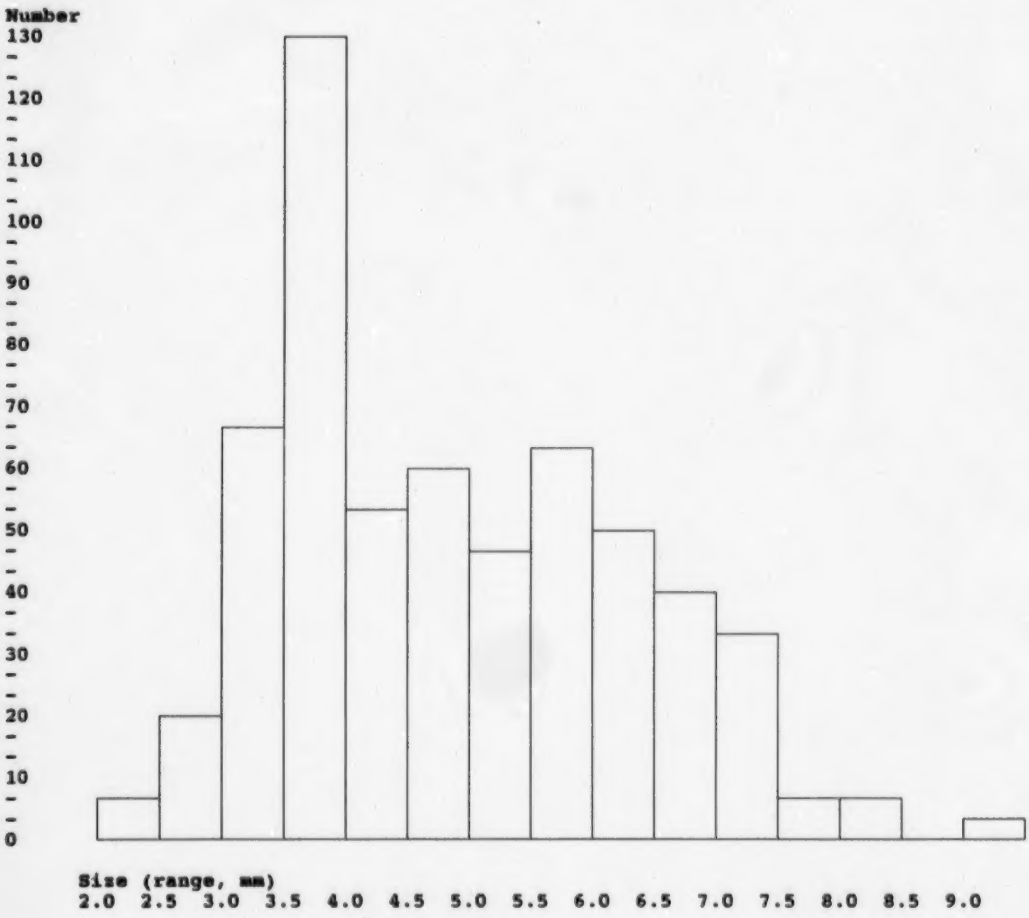

Figure AII.2. Frequency of white beads according to size.

There are very few beads of any other size. There also are five very lightly tumbled long cylinders similar to and about the same size as those noted above among the white beads.

AII.5.4. Cornaline d'Aleppo

Clear Green-Lined Cornaline d'Aleppo and Variations

This is the well-known red-brown (garnet) cornaline bead. Some specimens retain a shiny

lustre, but most are weathered to a dull, dark terracotta appearing surface. These beads tend to be well tumbled and many are essentially spherical, though most retain enough of a barrel shape to indicate their drawn cane ancestry. In size this group does not show the range exhibited by the white or even the black beads. A 4.6 mm long by 5.5 mm wide bead is relatively large, the largest is 5 x 6 mm wide. It is hard to single out a characteristic size but 4.2 x 4.4 mm wide probably is close. There are five elongate cylinders, similar to those noted among the white beads.

One variation of this type has a clear blue glass interior. Two were found. A substantial number of interiors are dark. It was not determined whether this attribute indicates use of a different glass or whether material from the outer layer, incorporated into the inner layer was blocking the transmission of light. This condition was observed at the ends of a few specimens in which glass from the red outer layer has been smeared over the ends. The green tint is very light, and some investigators also identify a wholly clear lining.

White-Lined Cornaline d'Aleppo

This type of bead is fundamentally different that the preceding, the differences not being limited to the lining layer. As is indicated by the name, these beads have a white interior. Many have split and this has provided the opportunity to examine the interior section, though I would not say that there is anything especially noteworthy to report in that regard. The two glass layers have a sharp interface, there being no mixing of material. The glass is a clear red that takes on a light, bright appearance because of the white core. These beads are very well tumbled, many to an almost spherical shape. In most instances the beads retain a fresh, shiny appearance. This type, more so than any other, was produced in the elongate cylinder format first described above for the white beads, there being 63 such specimens (some are intergrades). These beads occur in an essentially continuous size range up to 7.2 mm long.

A variation lacks the white core and consists of the red matrix only. It occurs only in two of the elongate cylinders.

AII.5.5. Blue Series

Medium to Deep Blue

The blue beads are especially subject to a necrosis which appears first as a few scales, light in colour due to reflection of light at cracks. Then more scales and light green blotches develop and progressively dominate, to the point that some beads present a predominantly light-turquoise coloured mass with a few specks of blue remaining. This colour range may describe a time-related progression. Through this process the beads retain a certain lustrous appearance until at the end the glass becomes very granular. Although sometimes these "diseased" beads are found disintegrated or in fragments, they do not appear to be especially more prone to breakage than certain other varieties. Unaffected beads tend to have dull, weathered surfaces, though, again, there are exceptions. Many of the diseased beads are large, in the order of 6.5 to 7 cm long and 9 mm in diameter, but there also are roughly as many in the size vicinity of 2.6 mm long and 4

mm wide. This condition was found to be almost absent among the relatively numerous dark blue seed beads. The affected beads occur from one end of the site to the other, in semisubterranean house floors, feature pits, soil test pits and cabin outlines. There is a strong correlation of large size examples with the trader's cabin House 7. This may be incidental, related more to the distribution to large blue beads than to bead disease.

Light Blue

In this colour group there are numerous seed beads and several hundred of an intermediate size somewhat aqua in colour, though they are not uniform in shade. These do not suffer from bead disease though they vary in their degree of weathering. The intermediate-size beads are evenly graded at 1.4 to 1.8 mm length and 2.5 mm width. As is the case with larger beads, width is more uniform than length. There also is a small number of very light blue ("baby blue" or turquoise) seed beads

AII.5.6. Mauve Beads

These beads occur in the seed and next, small, size which is typically 1.9-2.1 mm long and 3.1 mm wide. They are very uniformly graded to this size.Their shape is distinctively that of cane beads.

AII.5.7. Red Beads

Two transparent red or wine-coloured cylinders were noted earlier among the white-lined Cornalines. There are numerous light red, transparent, well rounded, evenly graded seed beads. All are very fresh in appearance.

We can also note here a single light red spherical bead, 4.8 by 6.5 mm with small perforation (615). It appears to be moulded or wound.

AII.6. DESCRIPTION OF PRESSED, POLYHEDRAL AND FACETTED BEADS

With the exception of one amber-yellow cane segment, all beads in these categories are blue coloured. Facetting can be achieved in various ways. The beads in the Fort Reliance collection appear to have been pressed from canes, the amber-yellow tube again excepted.

The amber-yellow glass cane is untumbled, has a large diameter perforation and striated surface (indicating that the cane was extruded?). It was recovered from the Pit M "Trader's lot." An additional bead of this type is present in the unprovenienced lot (pre-1983 collection) thought to come from the Pit M location.

All the blue facetted beads are of a single basic type, with three colour attributes (light,

medium and dark intensity), two perforation sizes, and two layering attributes (layered, not layered) which taken together constitute five bead varieties or subtypes occurring in the size range of 5.2 to 9.5 mm long. Beads of this kind often are called Russian beads though they are not especially associated with sites in Russian America. Ones of this type, but tending to be larger in size and of superior quality are very common in West Coast ethnographic collections. The six facetted blue beads are described individually inasmuch as five varieties are present.

No. 114 Light blue, complete, 5.2 mm long, moderate perforation, lighter blue lined core, edges of facets are rounded or muted.

No. 200 Medium blue, complete, 5.7 mm long, moderate perforation, lighter blue lined core, edges of facets are rounded or muted.

No. 228 Dark blue, complete, 8.3 mm long, narrow perforation, edges of facets are rounded

No. 264 Medium dark blue, split lengthwise, 9.5 mm long, large perforation, surface worn or abraded and edges of facets are not sharp.

No. 738 & 1172. Light blue, layered structure, medium to large perforations, 6.9 mm long, edges of facets are very rounded or muted.

Three examples were found in semisubterranean houses.

There is an additional style of pressed bead. The basic form is a decahedron (counting the ends as two of the ten sides) with eight concave facets. The interfaces or edges between faces are very rounded or muted. The degree of faceting varies from facet to facet. For example on one bead the area where two facets should appear there is a single convex surface. These beads appear to have been formed by hand in a press, or by pushing with a blunt tool to form the facets or "dimples." All 7 specimens are of very dark blue glass. They range in length from 5.3 to 6.9 mm, but are uniformly perforated. They were recovered from various locations on the site. Comparative information for this type has not come to my notice, though, in view of its apparent rarity, research into its historical significance undoubtedly would be worthwhile.

AII.7. DESCRIPTION OF WOUND BEADS

AII.7.1. White Wound Beads

A technological characteristic of wound beads is the presence of swirls in the glass, related to the manner in which these beads were formed. Most of the white wound beads from Fort Reliance are weathered resulting not only in their colour or lustre being altered and their common occurrence as halves of broken beads, but also in the glass swirls being outlined. This weathering is not a universal characteristic of wound beads. For instance, it does not affect early Russian beads from Three Saints on Kodiak Island. Weathering of these beads evidently is not simply a function of age and conditions of burial.

The sample consists of 23 halves and 3 complete beads. These beads are dull-white due to weathering. Commonly they are 6 to 6.5 mm long, nearly spherical, width only slightly greater

than length. There is greater uniformity among the wound beads than among cane beads. Possibly most of them are from a single lot inasmuch as almost all specimens are from the TP M "trader's lot." The length distribution of halves and the three whole beads is as follows in Table AII.7.

TABLE AII.7. SIZE OF WOUND BEADS

Range mm	Number White	Blue*
4.4-4.5		2
4.6-4.7		2
4.8-4.9		
5.0-5.1		2
5.2-5.3		2
5.4-5.5		2
5.6-5.7		
5.8-5.9	1	3
6.0-6.1	6	1
6.2-6.3	8	4
6.4-6.5	5	3
6.6-6.7		7
6.8-6.9	2	1
7.0-7.1	2	1
7.2-7.3	1	
7.4-7.5		

*All the subvarieties listed below. Excludes 13 halves in pre-1983 lot.

AII.7.2. Blue Wound Beads

Dark Blue Clear (N=3 complete)

A crudely formed specimen of this variety, from House 1, measures 5.3 by 6 mm and there are two well-formed examples 6.5 and 6.7 mm long (width slightly exceeds length).

Pale Aqua (N=5 Complete & Fragment + 3 Halves in Pre-1983 Lots)

The pale aqua colour is the result of weathering. The beads are well formed 6.5 to 7 mm long and 7.6 to 8.3 mm wide.

Dirty Aqua (N=2 Complete)

These beads are weathered differently than the preceding and thus may be from a different batch of glass. They are well formed, 6.2 and 6.6 mm long and a couple mm greater in width.

Pale And Light Blue (N=4 Complete, 16 Halves + 10 Halves in Pre-1983 Lot)

Some of these beads are weathered, others bright and lustrous. They are flattened spheroids, wider than long, with the exception of one of elongate format. Usually swirl lines show clearly, but that is not always the case.

Light-Red Translucent (N=1 Complete)

The single well-formed sphere from House 6 measures 5.8 by 6.5 mm.

The provenience of these wound beads includes the whole site but most of the halves came from Test Pit M, the "Trader's lot" which may indicate increased emphasis on this type late in the history of Fort Reliance.

AII.8. SHELL BEADS

Two segments of dentalium shell were recovered together from the floor of semisubterranean House 1 (Pl. 13 e). Both a 14 mm-long, thick, mid-shell segment and a smaller tip end segment are smoothed at the ends. The surfaces are hard and have retained their fresh and glossy appearance. West Coast dentalium was examined to determine that the Fort Reliance pieces are in fact genuine. Dentalium was available in the interior region through both Native trade links and through white traders, and at least the impetus to acquire dentalium can be attributed to indirect links with Indian traders from the Pacific coast.

TABLE AII.8. BEADS FROM FORT RELIANCE, DISTRIBUTION BY EXCAVATION UNIT (from Bank to TPE)

	Bank	Surf	P 4	P 3	Old col	TP O	TP M	TP L	TP K	TP J	TP H	TP G	TP F	TP E
Dentalium	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Unspecified	.	.	.	1	.	.	.	.	.	.	.	.	.	.
Blue rectangular moulded	.	.	1	.	.	.	1	.	1	.	.	.	.	.
Facetted, drawn, blue	.	.	.	.	.	.	.	.	1	.	.	.	.	.
Wound	.	.	.	2	11	.	16	.	1	.	3	.	.	1
white	.	.	.	.	3	.	8	.	1	.	3	.	.	.
blue	.	.	.	2	8	.	8	.	.	.	.	.	.	1
Pony tube (pound)														
Subtotal	3	.	3	35	76	.	410	4	33	.	1	7	3	3
white, white cylinder	2	.	1	4	24	.	115	3	7	.	1	4	1	2
black, black cylinder	.	.	.	.	9	.	34	.	1	.	.	1	.	.
blue-black cylinder	.	.	.	.	.	.	2	.	.	.	.	.	.	.
blue, various	1	.	1	.	98	.	23	.	.	.	.	1	.	.
corroded blue/green	.	.	.	28	.	.	7	.	5	.	.	.	.	.
clear-lined Cornaline	.	.	1	.	.	.	3	.	2	.	.	.	1	1
white-lined Cornaline	.	.	.	.	11	.	62	.	2	.	.	1	1	.
" " cylinder	.	.	.	.	.	.	33	1	.	.	.	.	.	.
pink-mauve, small	.	.	.	3	33	.	160	1	14	.	.	.	.	.
red-amber (wine)	.	.	.	.	.	.	.	.	.	.	.	.	.	.
other, unspecified	.	.	.	.	.	.	4	.	.	.	.	.	.	.
Seed-pony intergrade														
blue	.	.	.	.	.	.	799	4	4	.	.	3	.	.
white	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Very small (seed)														
Subtotal	.	.	.	1	45	.	212	.	4	.	.	1	.	.
red-amber	.	.	.	.	27	.	108	.	.	.	.	.	.	.
pink-mauve	.	.	.	1	.	.	6	.	.	.	.	.	.	.
white	.	.	.	.	9	.	22	.	2	.	.	1	.	.
yellow-white	.	.	.	.	.	.	23	.	.	.	.	.	.	.
white-lined Cornaline	.	.	.	.	.	.	1	.	.	.	.	.	.	.
blues, corroded green	.	.	.	.	9	.	50	.	2	.	.	.	.	.
black	.	.	.	.	.	.	2	.	.	.	.	.	.	.
clear colourless opaline	.	.	.	.	.	.	.	.	.	.	.	.	.	.
clear faint rose	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Total	3	0	4	39	132	0	1438	8	44	0	4	11	3	4

Several test excavations are not shown because of their low yield. These two among them produced beads:
TP P (flag pole) -- 2 beads (white green lined cornaline d'Aleppo)
Old TP expanded -- a seed bead.
The white-lined cornaline cylinder also are counted with the White-lined cornaline d'Aleppo.

TABLE AII.8. BEADS FROM FORT RELIANCE, DISTRIBUTION BY EXCAVATION UNIT (from TPD to H1)

	TP D	TP C	TP BQ	TP A	TP 12	H 10	H 9	H 7	H 6	H 5	H 4	H 3	H 2	H 1
Dentalium	.	.	.	.	.	.	.	.	.	.	.	.	.	2
Unspecified	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Blue rectangular moulded	.	.	.	.	.	.	.	.	.	.	.	.	1	2
Facetted, blue	.	.	.	.	.	1	.	.	.	.	.	.	3	1
Wound	.	.	.	.	4	1	.	.	1	.	1	1	2	4
white	.	.	.	.	.	.	.	.	.	.	.	.	.	.
blue	.	.	.	.	4	1	.	.	1	.	1	1	2	4
Pony tube (pound)														
Subtotal	2	55	14	25	191	38	9	141	9	3	79	22	194	120
white, white cylinder	1	41	12	18	127	24	4	3	4	1	54	12	125	35
black, black cylinder	.	14	2	6	33	2	.	.	.	.	1	.	10	3
blue-black cylinder	.	.	.	.	.	.	.	.	.	.	.	.	.	.
blue, various	.	.	.	.	8	2	.	.	1	.	2	1	30	37
corroded blue/green	.	.	.	.	2	3	.	11	.	.	4	.	.	2
clear-lined Cornaline	1	2	.	.	20	.	.	1	.	.	13	1	27	11
white-lined Cornaline	.	.	.	1	1	6	5	2	.	.	5	8	21	28
" " cylinder	.	.	.	.	.	.	.	.	.	.	.	.	4	11
pink-mauve, small	.	.	.	.	.	.	.	124	3	.	.	.	.	1
red-amber (wine)	.	.	.	.	.	.	.	.	1	2	.	.	.	1
other, unspecified	.	.	.	.	.	1	.	.	.	.	1	.	.	.
Seed-pony intergrade														
blue	.	.	.	.	.	.	.	15	.	.	.	.	.	.
white	.	.	.	.	.	.	.	3	.	.	.	.	.	.
Very small (seed)														
Subtotal	.	.	.	.	1	.	5	404	2	.	.	152	5	.
red-amber	.	.	.	.	.	.	.	73	.	.	.	.	.	.
pink-mauve	.	.	.	.	.	.	.	57	.	.	.	15	.	.
white	.	.	.	.	.	.	1	86	.	.	.	23	4	.
yellow-white	.	.	.	.	.	.	.	80	.	.	.	19	.	.
white-lined Cornaline	.	.	.	.	.	.	.	7	1	.	.	1	.	.
blues, corroded green	.	.	.	.	1	.	4	100	1	.	.	89	1	.
black	.	.	.	.	.	.	.	.	.	.	.	.	.	.
clear colourless opaline	.	.	.	.	.	.	.	1	.	.	.	2	.	.
clear faint rose	.	.	.	.	.	.	.	.	.	.	.	3	.	.
Total	2	55	14	25	196	40	14	563	12	3	80	175	205	129

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PLATE 1

BONE ARTIFACTS AND ASSAY MATERIALS

No.		Catalog No.	Location
a	Awl, on splint bone	148	H1 floor
b	Awl fragment	1533	TPQ
c	End-of-bone flesher (incomplete)	164	H1 entry fill
d	Arrowhead	870	H12 turf
e	Awl fragment, on splint bone	104	H1 floor
f	Decorated bone sucking tube fragment	522	H4 dark sand
g	Unidentified (lurehook body, ivory?)	1426	River bank
h	Sherd from crucible	318	H3 floor
i	Coarse sherd from possible crucible	1088	TPH sod
j	Cupel	389	H4 sod
k	Cupel	397	H4 sod

Scale: Natural size

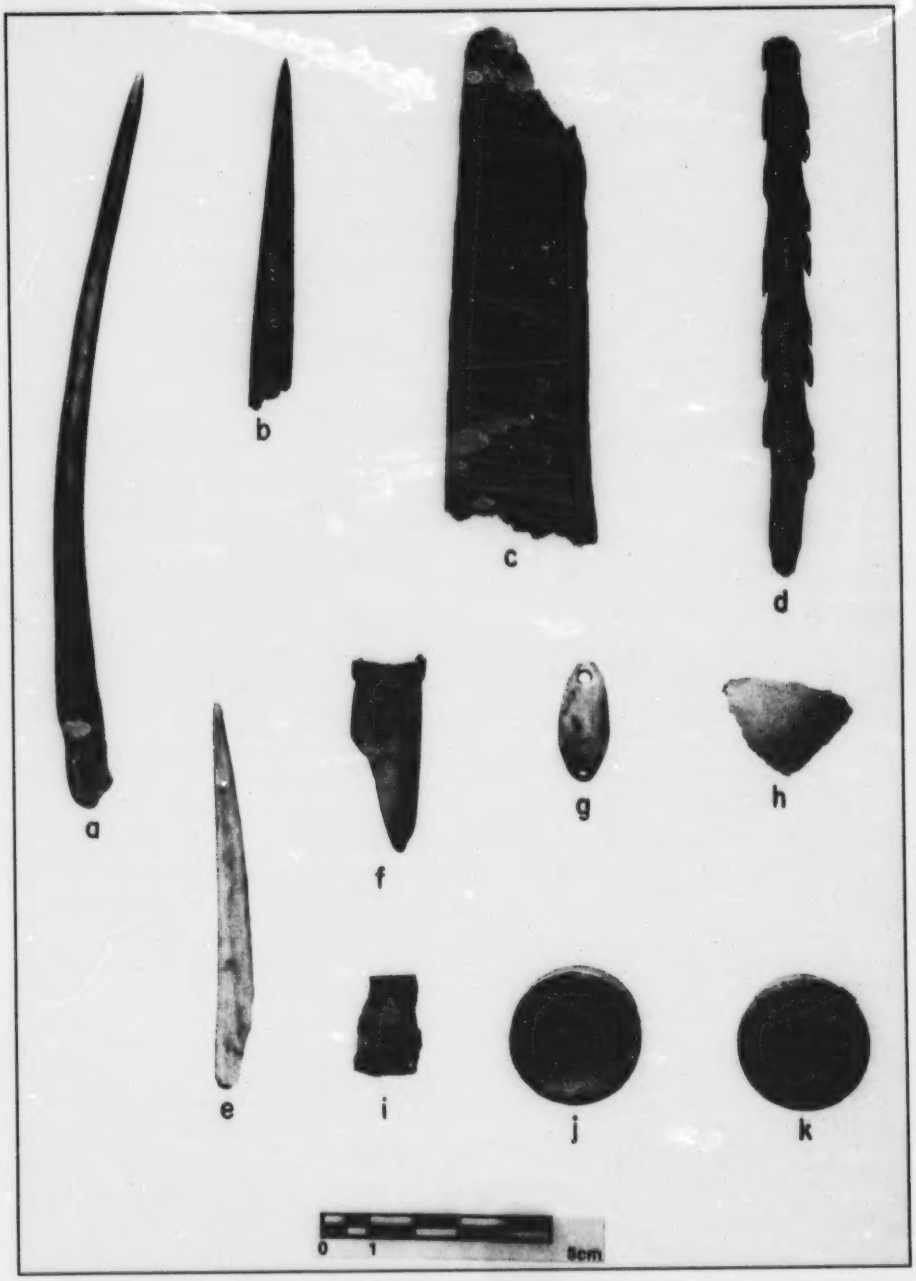

PLATE 1. BONE ARTIFACTS AND ASSAY MATERIALS

PLATE 2

TABULAR AND BOULDER SPALL SCRAPERS

No.		Catalog No.	Location
a	Tabular schist scraper	283	H2 floor
b	Tabular schist scraper	1559	H1 rear wall
c	Boulder spall scraper	1556	H1 rear wall
d	Tabular schist scraper, fragmentary half	935	H12 fill above floor
e	Boulder spall scraper	957	TPA top 10 cm
f	Roughly bifaced flat cobble	587	H4 main occupation

Scale: 2/3 natural size

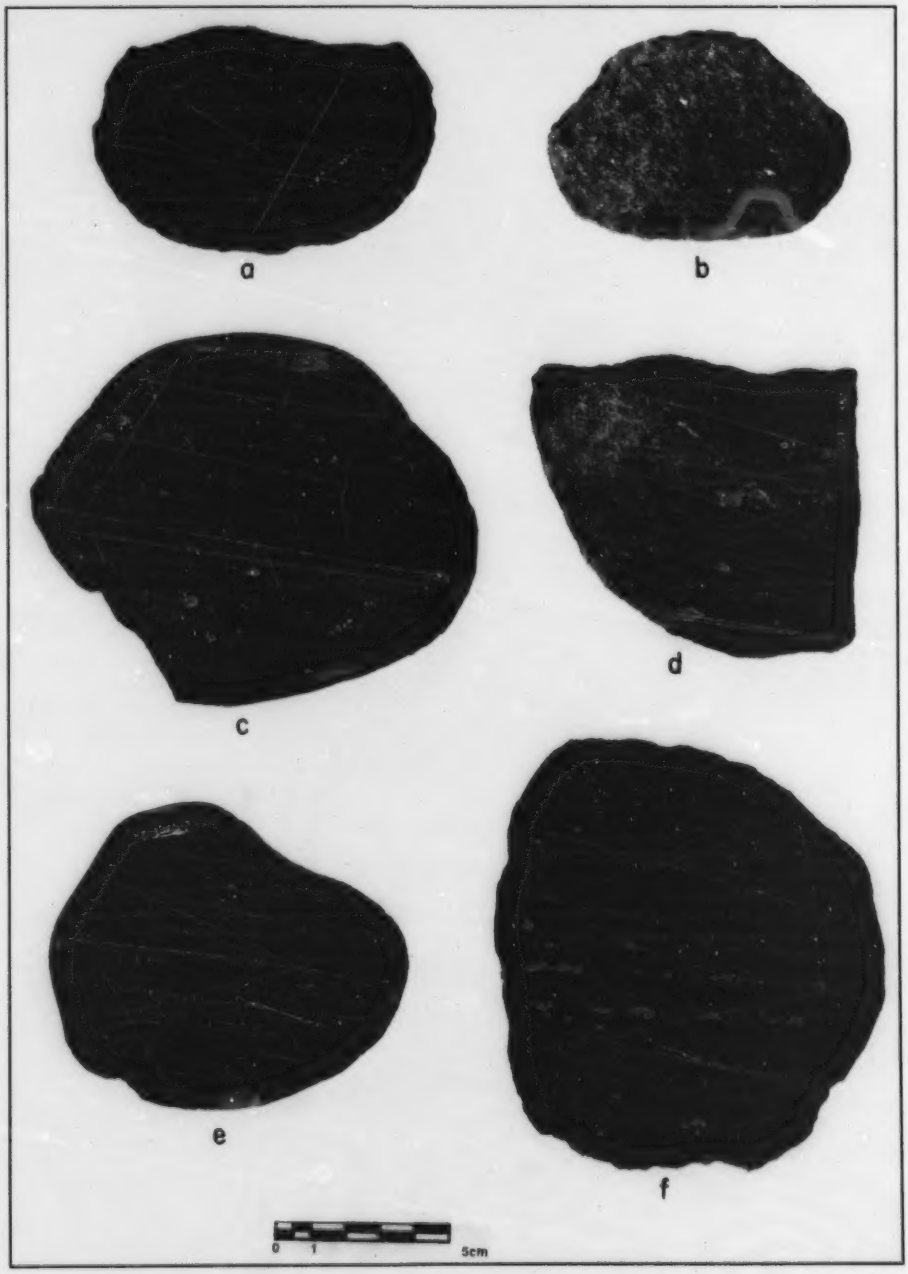

PLATE 2. TABULAR AND BOULDER SPALL SCRAPERS

PLATE 3

SMALL STONE TOOLS

No.		Catalog No.	Location
a	Worked chert flake, right edge notched	473	H4 floor
b	Obsidian flake utilized on both edges	976	TPA 10-20 cm
c	Obsidian flake utilized on right edge	980	TPA 10-20 cm
d	Chert flake, utilized along lower right edge	529	H4 just under sod
e	Obsidian flake utilized on right edge	979	TPA 10-20 cm
f	Stemmed spear tip	1123	TPJ dark sub sand
g	Flake in form of end scraper with thin edge	1036	TPE 10 cm dbs
h	Thick chert flake, roughly bifaced with grinding	1014	TPP ash layer
i	Black chert end scraper	1258	TPM
j	Chert end scraper with bifaced bit	353	H3 floor
k	Chert end scraper	24	Surface
l	Obsidian end scraper, incomplete	974	TPA 10-20 cm
m	Thick bladelike flake	969	TPA 10-20 cm
n	Flake core or core-biface roughout	1478	TPR
o	Core fragment	1124	TPJ dark -sandy
p	Worked pebble (core reject)	1528, 1537	TPQ; TPQ
q	Roughly formed biface	771	H10 hearth layer
r	Fragment of large pecked greywacke adze	1434	River bank
s	Worked chert pebble (early stage biface reduction or core)	1257	TPM lower brown under humic
t	Bar-shaped whetstone (incomplete)	1253	TPM

Scale: Slightly greater than 2/3 natural size
b, c, and e have been opaqued

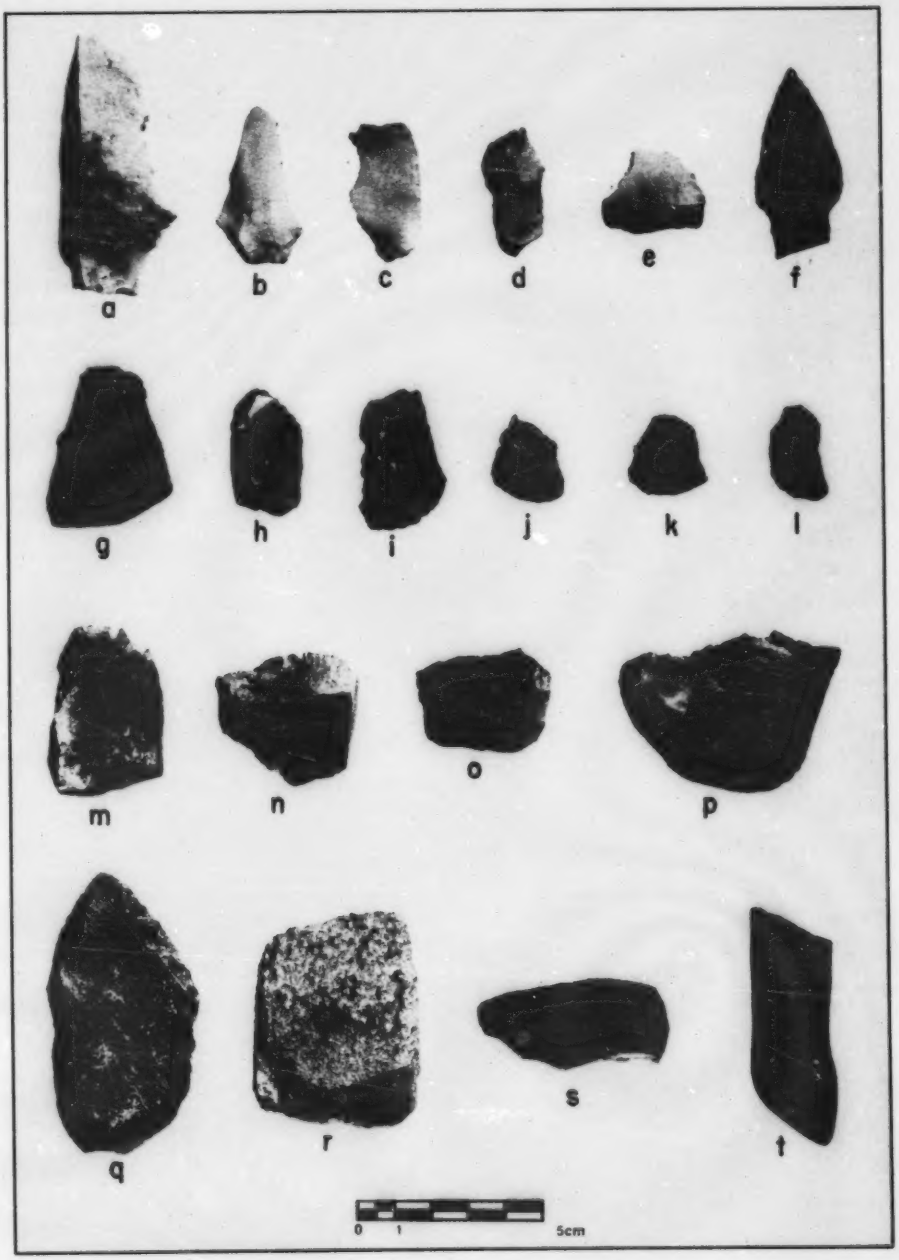

PLATE 3. SMALL STONE TOOLS

PLATE 4

FIREARMS COMPLEX

No.		Catalog No.	Location
a	Cartridge case, 30 cal W.R.A. Co. ARMY	953a	TPA sod
b	Cartridge case, 30-30 D.C. Co.	924a	H12 sod & top soil
	Cartridge case, 30-30 DOMINION (right)	953b	TPA just sub-sod
c	Centrefire cartridge case	1317	Pit 3 to 35 cm
d	Recycled cartridge case, 30 cal (head cut off)	839	H12 fill sub 13 cm
e	Cartridge cases, 22-cal special, H & U heads	984, 1113	TPA 10-20;TPJ sod
f	Cartridge cases, 44 cal rim-fire, H headstamp	604, 1104	H5 sod; TPH -clay
g	Dropshot pellets, large	178	H2 floor
h	Buckshot pellet, very large	1141	TPK green sand
i	Musket balls	303, 990	H3; TPB
j	Metal dribbles, lead or lead alloy	1330	Pit 3 to 35 cm
k	12 ga shotgun cartridge head, ARROW	1565	H1 entry
l	16 ga shotgun cartridge head, LEADER	40	Surface
m	12 ga shotgun cartridge head, METEOR	493	H4 sod
n	12 ga shotgun cartridge head, GRAND PRIX	782	H12 sod & topsoil
o	Trigger guard, iron, incomplete	399	H4 sod
p	Cap can	1519	H1 floor

Scale: natural size

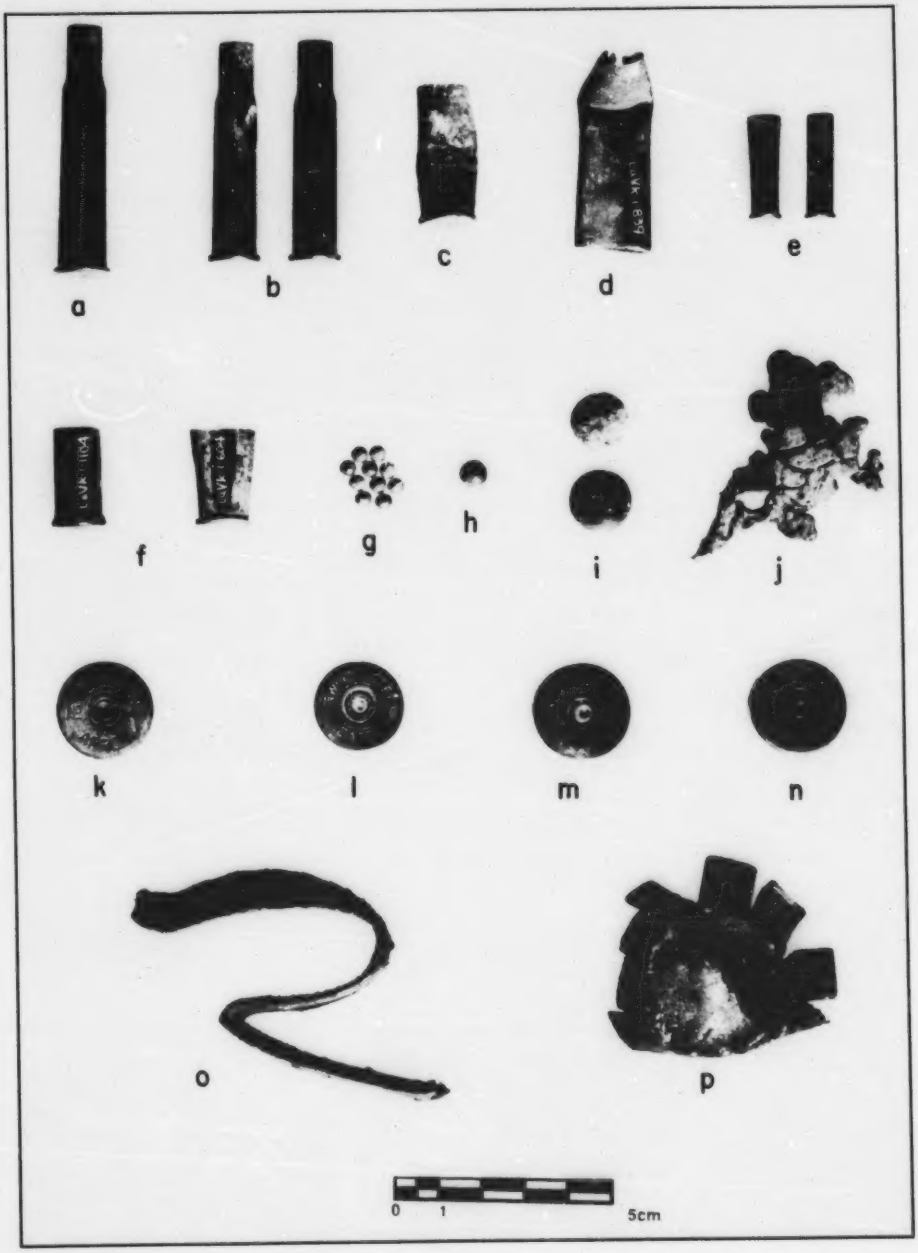

PLATE 4. FIREARMS COMPLEX

PLATE 5

POWDER FLASKS IN VARIOUS STAGES OF RECYCLING

No.		Catalog No.	Location
a	Top of powder can, without cap/neck, large size	1406	River bank
b	Top of powder can, without cap/neck, normal	430	H4 tan under sod
c	Side of powder can, folded inside-out	206	H2 floor
d	Metal sheet from the side of a powder can	73	Surface near H1
e	Sides of powder can, top and bottom removed	470	H4 floor
f	Powder can with top removed	1461	Surface near H8--9

Scale: 2/3 natural size

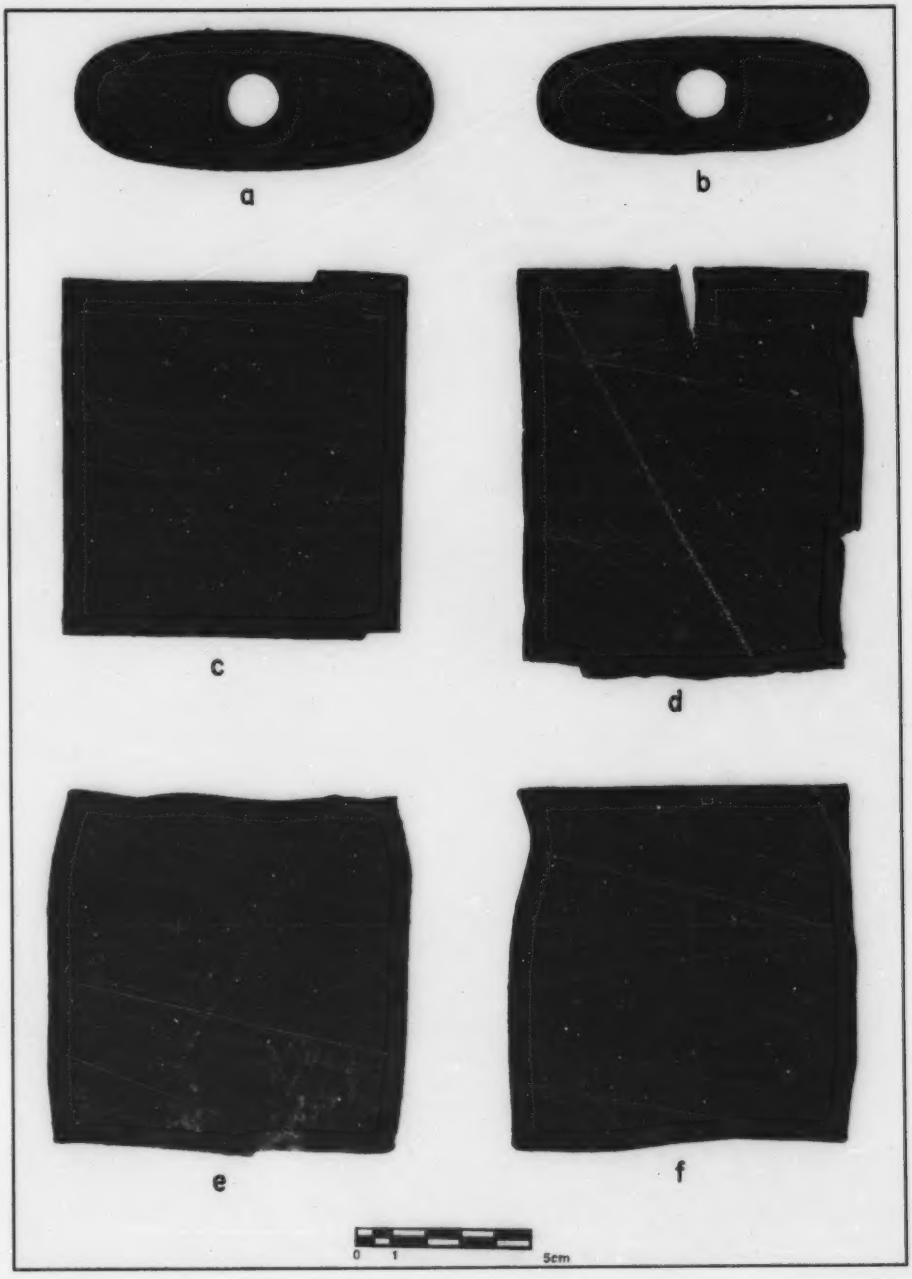

PLATE 5. POWDER FLASKS IN VARIOUS STAGES OF RECYCLING

PLATE 6

TOOLS AND MISCELLANEOUS OBJECTS

No.		Catalog No.	Location
a	Unidentified hand made object, copper alloy	352	H3 floor
b	Bail attachment for kettle or bucket	218	H2 floor
c	Bail attachment for kettle or bucket	1186	TPK
d	Unidentified object (resemblance to can opener blade is incidental)	21	Surface
e	Unidentified (part of carbine mechanism?)	1325	Pit 3 to 35 cm
f	Wood screw	144	H1 floor
g	Machine screws (2)	1160, 305	TPK; H3
h	Unidentified forged object	1303	Pit 3 rim
i	Unidentified forged rod	1324	Pit 3 to 35 cm
j	Cup handle	351	H3 floor
k	Awl?	1479	River bank
l	Unidentified forged object	1378	Pit 3 bottom
m	Unidentified object	1326	Pit 3 to 35 cm
n	Utilized glass sherd, scraper?	622	H6 dark layer
o	Unidentified object	1356	Pit 3 lower
p	File	754	H10 hearth layer
q	Chisel	307	H3 floor
r	Scoop-shaped object, of recycled can metal	757	H10 hearth layer
s	Scissors blade	1371	Pit 3 bottom
t	Knife blade	1302	Pit 3 rim

Scale: 5/6 natural size

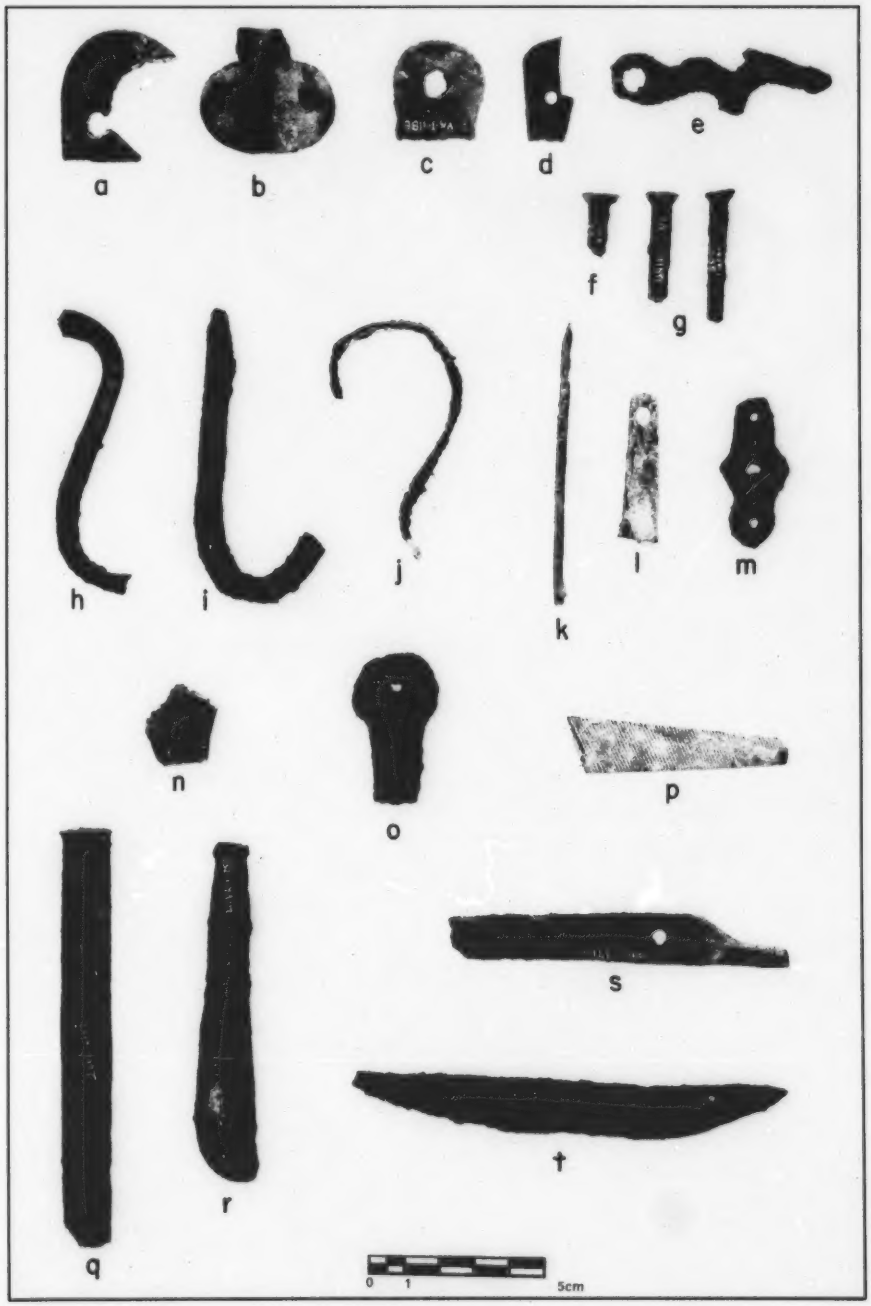

PLATE 6. TOOLS AND MISCELLANEOUS OBJECTS

PLATE 7

LARGE METAL OBJECTS

No.		Catalog No.	Location
a	Dish, shallow	1466	Surface, 38 N, 5 W
b	Dish, deep	1465	Surface 40 N 0 E
c	Lid from large cannister	1467	H2 SW quad, surf.
d	Soldered tube	471	H4 floor
e	Chinking tool? (right edge swedged)	1469	H7 surface
f	Wire rod tool	1488	H1 sod
g	Can, end view showing closure attributes common to several sizes or varieties	1450	H7 surface
h	Cast iron stove part	469	H4 floor
i	Cast iron stove part	1328	Pit 3 to 35 cm

Scale: Approximately 1/3 natural size

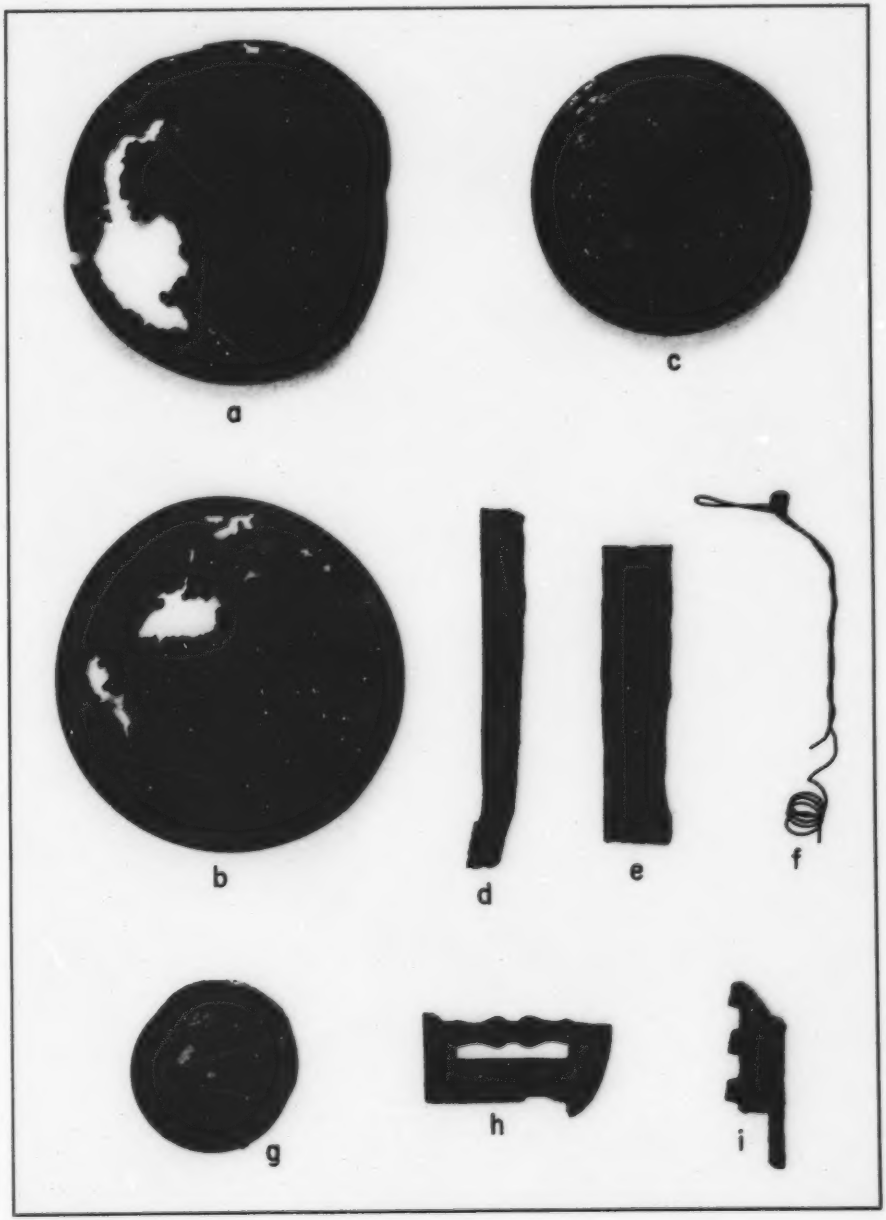

PLATE 7. LARGE METAL OBJECTS

PLATE 8

CANS

No.		Catalog No.	Location
a	Spice can (without top)	1453	H7 surface
b	Detached top of a rectangular can	1448	H7 surface
c	Top cut from a large cylindrical can (discard, metal from sides of can probably recycled)	942	H12 floor
d	Disc cap from can	856	H12 floor
e	Base (inverted) and top of same can in shape of truncated cone (opened by means of peal strip)	1449	H7 surface
f	French sardine can, base (note adhering lead)	491	H4 sod
g	Sardine can	1447	H7 surface
h	Cigarette can?, hinged lid	1481	Surface? moved

Scale: One-half natural size

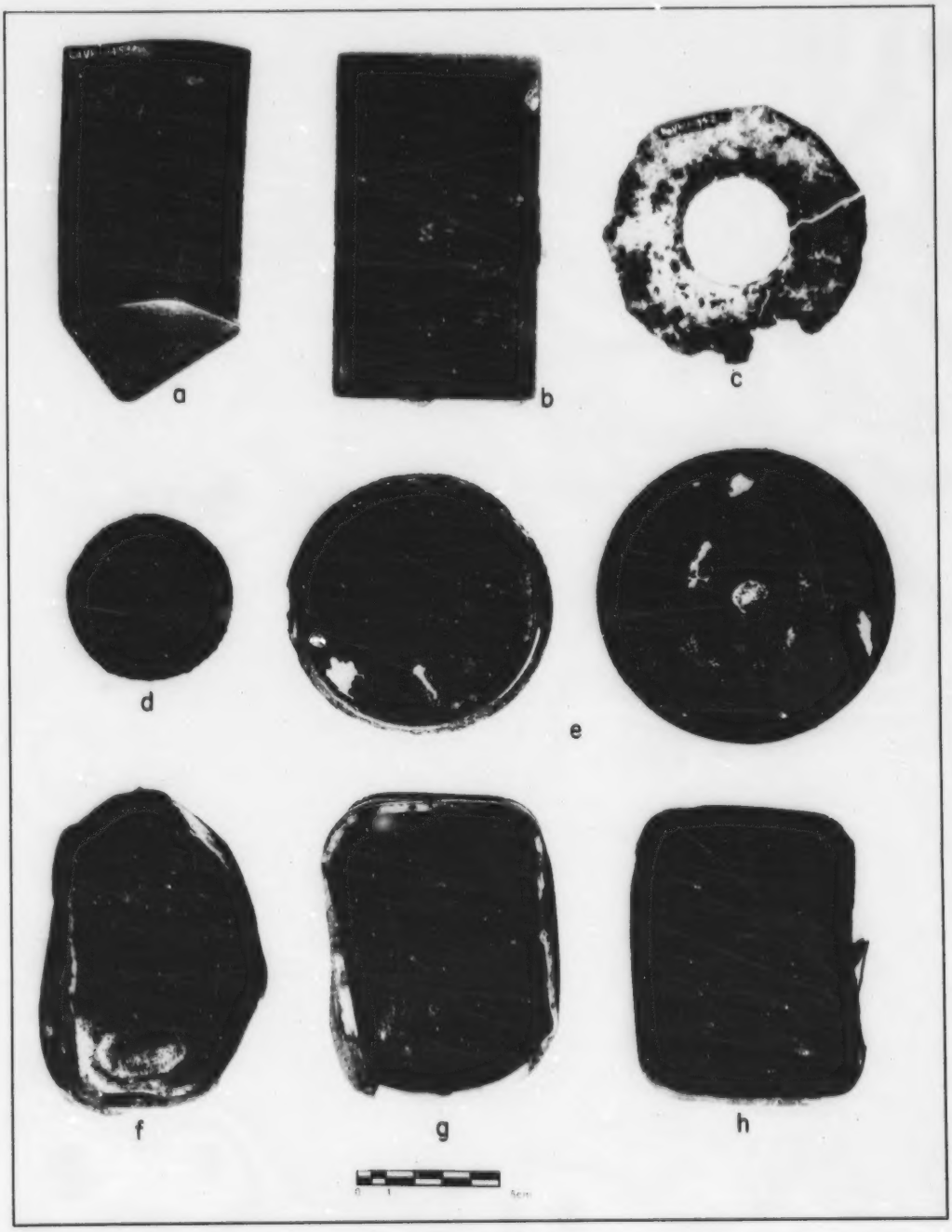

PLATE 8. CANS

PLATE 9

IRONSTONE CERAMICS AND GLASS

No		Catalog No.	Location
a	Painted ware (red & blue flower, yellow spot)	842	H12 fill +13 cm
b	Painted ware (open blue flower, red flower)	572	H4 main occup.
c	Painted ware (red rim line, dark green leaf)	428d	H4 tan soil -sod
d	Painted ware (mug?, minor design, lt green)	324a	H3 under sod
e	Painted ware (open blue flower, yellow spot)	915	H12 floor
f	Painted ware (open blue flower, no rim line)	553	H4 occup. layer
g	Painted tableware (bowl?, red rim lines)	48	Surface
h	Black print (cup or bowl body sherd)	781	H2 turf or topsoil
	(handle, same pattern)	1299	Pit 3
i	Blue print (cloud motif)	371	H4 sod
j	Blue print tableware (rosetta motif)	383	H4 sod
k	Blue print tableware (flower motif)	1376	Pit 4
l	Blue print tableware (floral & spiral motifs)	1371, 413, 383	Pit 3 base; H4 sod; H4 sod
m	Blue print ware (willow pattern, potter's mark)	696a	H9 below sod
n	Blue print tableware (willow pattern)	1407	River bank
o	Blue print tableware (probably willow pattern)	1407	River bank
p	Lightly embossed sherd with flange	384	H4 sod
q	Blown bottle lip and neck fragment, aqua glass	1570, 1588	H1 floor

Scale: Slightly more than 3/3 natural

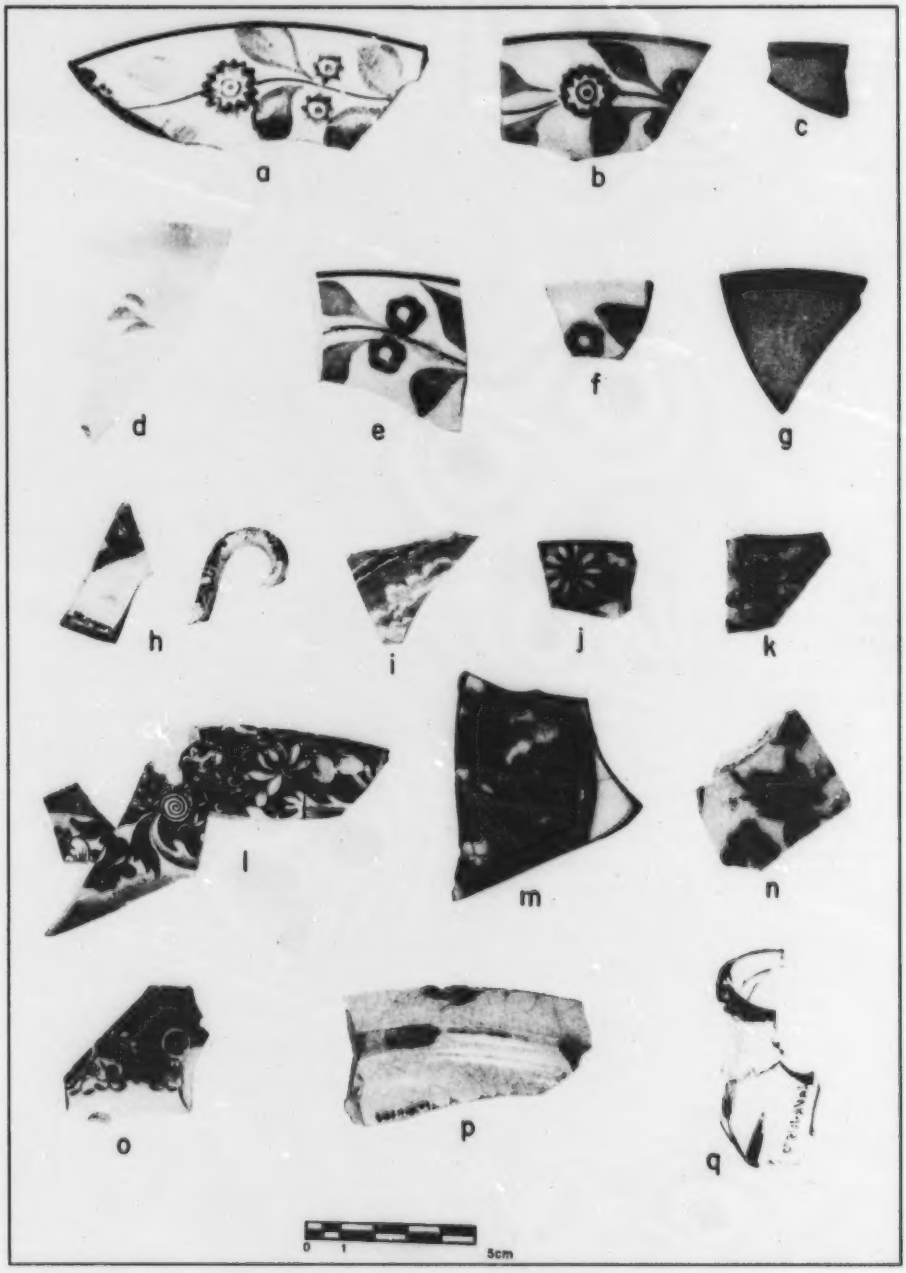

PLATE 9. IRONSTONE CERAMICS AND GLASS

PLATE 10

OBJECTS OF VARIOUS CATEGORIES

No.		Catalog No.	Location
a	Six cut nails	Various	Various
b	Four wire nails	Various	Various
c	Modified copper or brass "strut"	923	H12 sod & top soil
d	Wire	83	H1
e	Copper alloy tack	186	H1 floor
f	Inset: detail of bail attaching lug on old-style large pail modified for use as roof jack	1463	Surface, 2 m S of H1
g	Kerosene lamp burner part	1319	Pit 3 to 35 cm
h	Iron strap	431	H4 tan soil sub-sod
i	Sewn birchbark, two joined pieces here shown disassociated	575	H4 occupation
j	Unidentified object	1329	Pit 3 to 35 cm

Scale: 2/3 natural size, except f which is full size

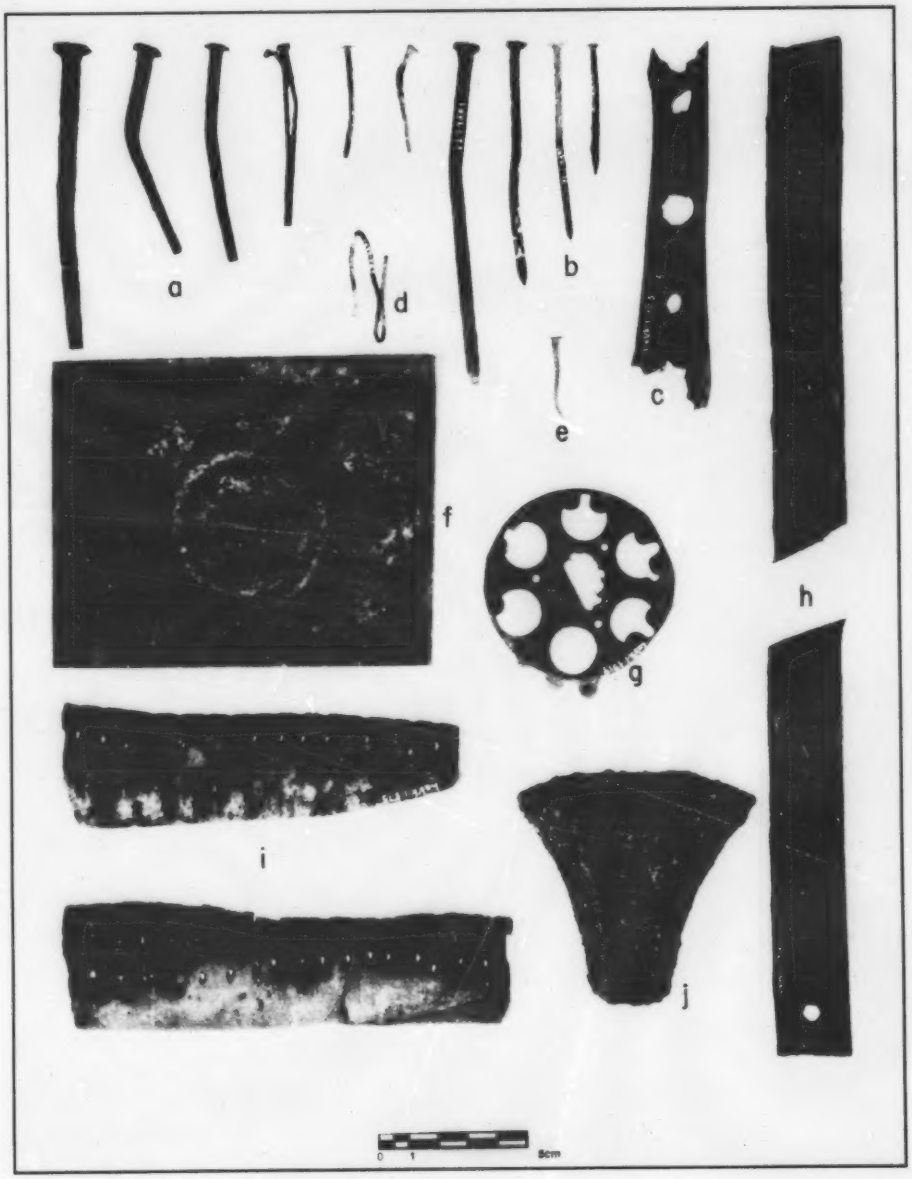

PLATE 10. OBJECTS OF VARIOUS CATEGORIES

PLATE 11

SCOOP-SHAPED OBJECTS OF RECYCLED METAL

No.		Catalog No.	Location
a	Metal object closed and folded at one end	1483	Surface? moved
b	Metal object closed and folded at one end	365	Surface at H4
c	Sheet metal object folded at one end	527	H4 dark sand -sod
d	Sheet metal object folded at one end	528	H4 dark sand -sod

Scale: 2/3 natural size

BIRCHBARK CONTAINER

e	Birchbark tobacco container	292	H3 floor

Scale: natural size

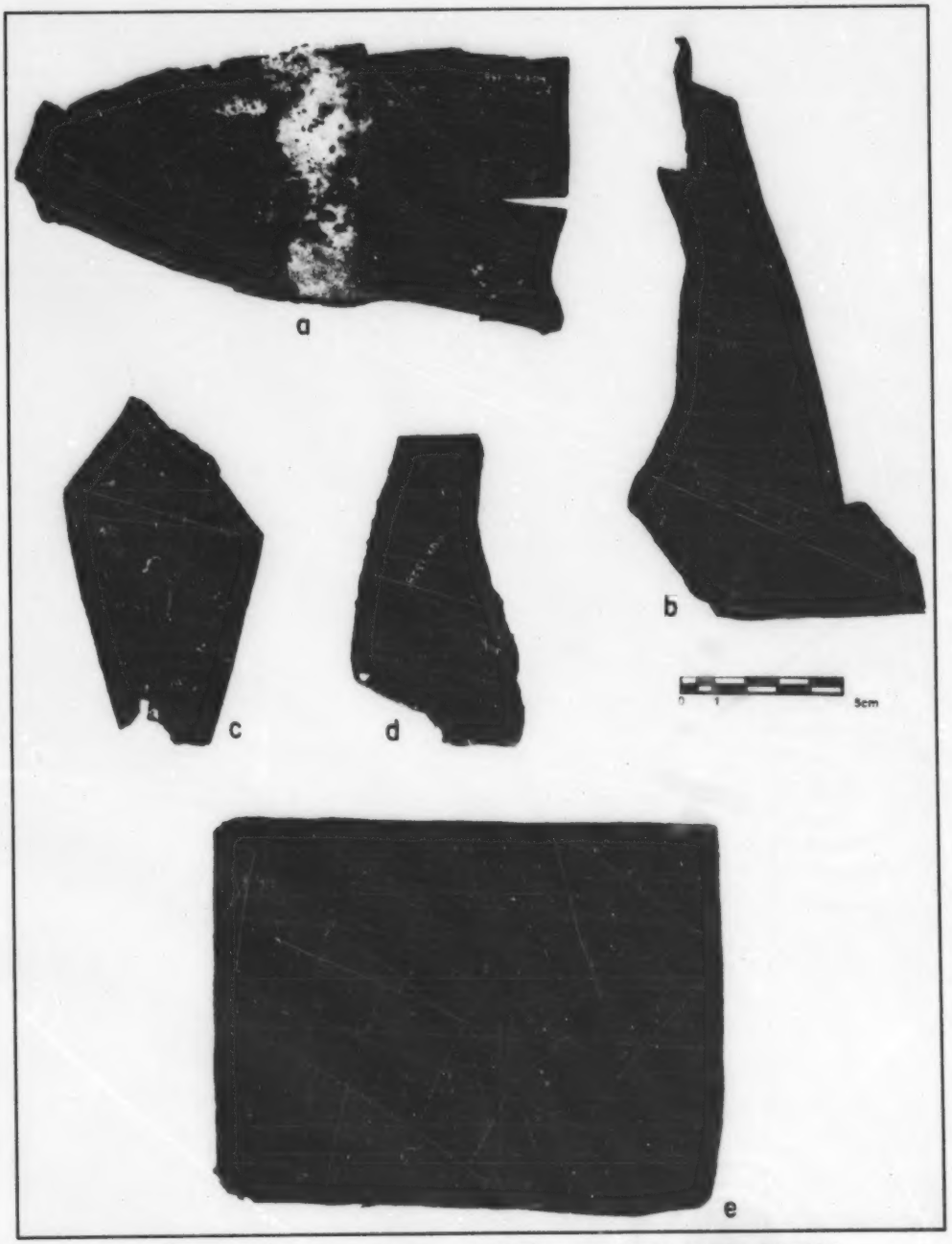

PLATE 11. SCOOP-SHAPED OBJECTS OF RECYCLED METAL AND BIRCHBARK CONTAINER

PLATE 12

CLOTHING AND PERSONAL USE ITEMS
CLAY PIPE FRAGMENTS

No.		Catalog No.	Location
a	Button, iron, heavily corroded	1161	TPK
b	Button, iron	80	H1
c	Button, moulded composite material	779	H12 turf & topsoil
d	Button, mother of pearl	1428	River bank, late?
e	Milk-glass buttons	358, 890	H3 floor; H12 lower brown soil
		299 (small)	H3 floor
f	Dress button (iron loop at back)	1296	Pit 3
g	Collar stay?	609	H6 below sod
h	Comb	84	H1
i	Metal seal, recycled	676	H7 below plank
j	Tobacco seal	1245	TPM
k	Cross	1034	TPE, 10 cm dbs
l	Pipe stem fragment	1506	H1 floor
m	Pipe stem fragment	202	H2 floor
n	Pipe stem tip fragment	179	H2 floor
o	Pipe bowl fragment with incised line	1429	River bank
p	Pipe bowl sherd	744	H10 hearth layer
q	Pipe bowl sherd with impressed "D"	244	H2 floor
r	Pipe stem-bowl sherd	765	H10 hearth layer
s	Pebble, colourless waxy chalcedony	1025	TPE sod/top soil

Scale: natural size

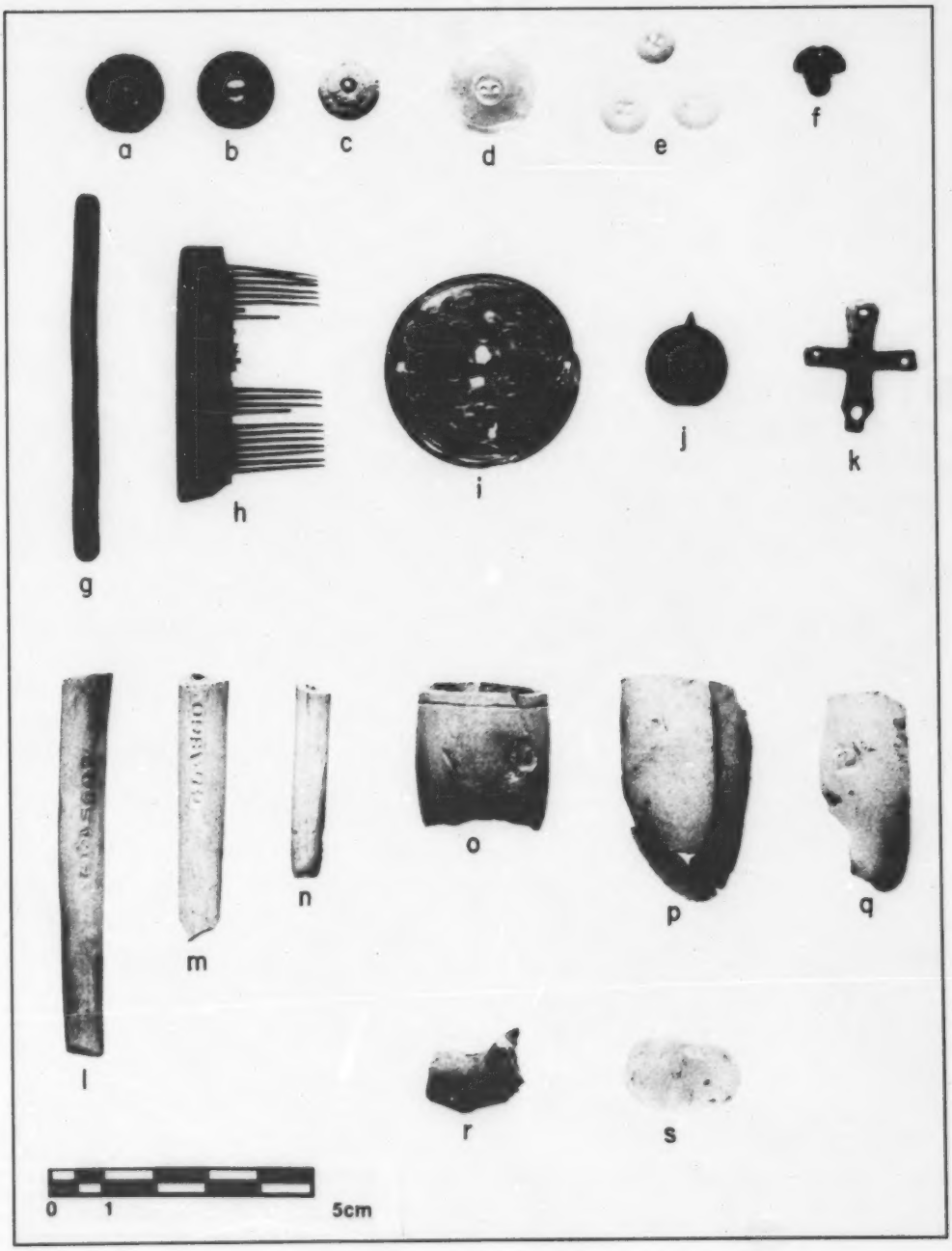

PLATE 12. CLOTHING AND PERSONAL USE ITEMS, CLAY PIPE FRAGMENTS

PLATE 13

BEADS

No.	Description	Catalog No.	Location
a	White drawn beads showing size range	612 (largest)	H6 dark layer
		664 (3 items)	H7 below plank
		518 (3 smaller	H4 topsoil below sod
		239 (seed)	H2 floor
b	"Diseased" blue drawn	368 (large)	H4 sod
		1226 (several)	TPM
c	Dark blue drawn, larger examples	170 (elongate)	H1 floor
		242 (several)	H2 floor
d	Selection of seed beads (various colours)	671	H7 below plank
e	Dentalium	141	H1 floor
f	Blue facetted	Lower, split	H2 floor
		114, (upper)	light blue
g	Black drawn, small	215	H2 floor
h	Cornaline d'Aleppo white lined drawn	200 (side)	H2 floor
		1514 (large)	H1
		1515 (section)	H1
		197 (elongate)	H2 floor
		658 (smaller)	H7 below plank
		1235 (seed)	TPM
		682 (seed)	H7 below plank
i	Cornaline d'Aleppo clear lined drawn	367 (elongate)	H4 sod
		465 (side)	H4 floor
		566 (2 ends)	H4 main occupation
j	Larger black drawn	1228 (long)	TPM
		1007 (midsize)	TPC
k	Dark blue pressed	1375 (larger)	Pit 4
		138 (2 small)	H1 floor
l	Very-dark blue, wound (2x)	114 (upper)	H1 floor
	Dark blue, wound, small	115 (lower)	
m	White wound	1218 (2)	TPM
		1086 (section)	TPH sod
n	Blue faded to aqua, wound	616	H6 dark layer
		1311 (soiled)	Pit 3 to 35cm
o	Light or "robin's egg" blue, wound	369	H4 sod
		263 (split)	H2 floor

Scale: Slightly larger than natural size

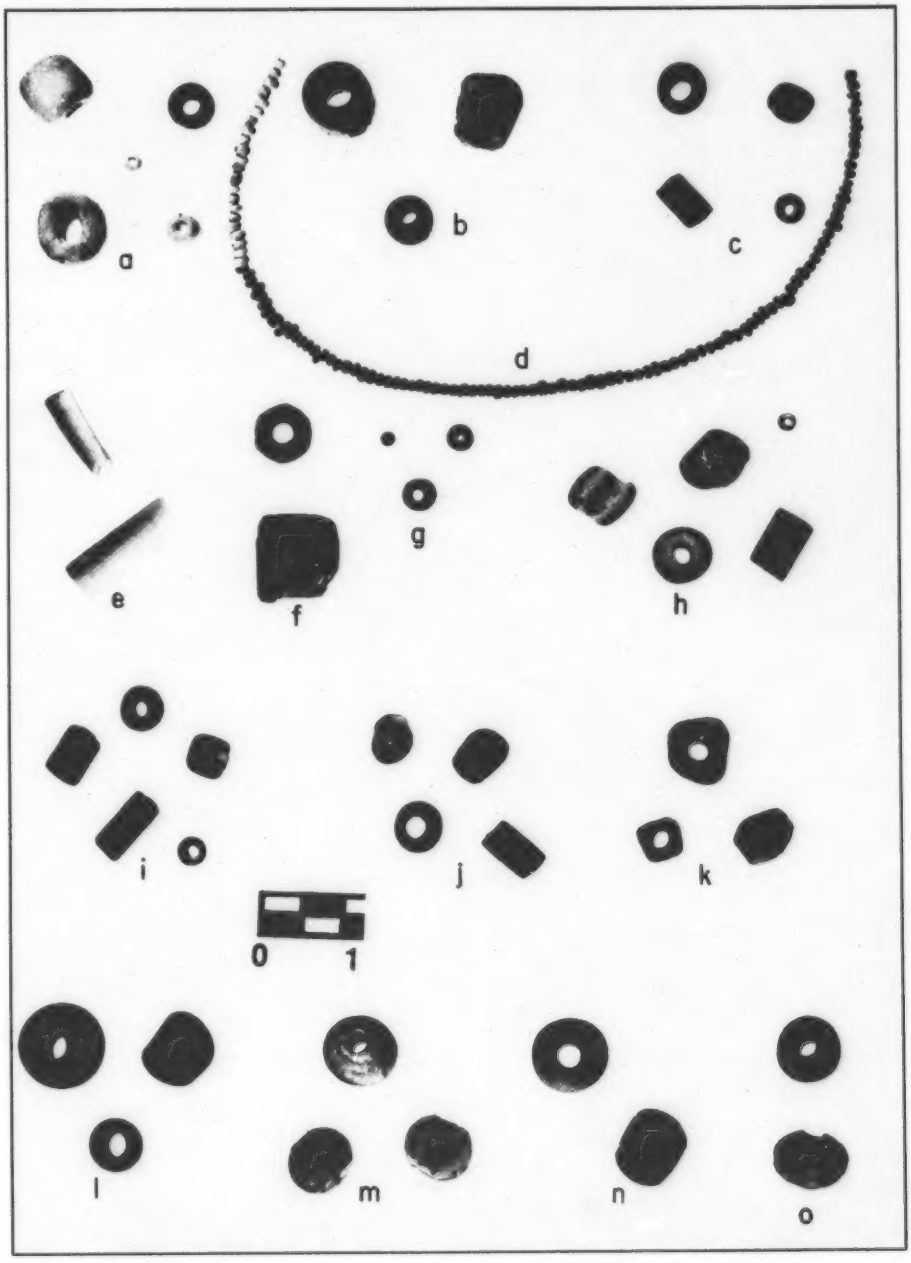

PLATE 13. BEADS

Fort Reliance, Yukon: An Archaeological Assessment

by Donald W. Clark

Initially founded by François Mercier as a small, semi-independent fur-trading post, Fort Reliance is of particular interest and importance because of its role in opening the Yukon to prospecting and mining, which eventually led to the Klondike discovery. The trading post became the primary focal point for what one author has termed the "Prelude to Bonanza." The location was also a pre-Gold Rush Han Athapaskan settlement, with a unique and somewhat enigmatic set of semisubterranean houses. Traces survive of the original structures, and possibly of all structures ever built there.

This study describes the history of Fort Reliance, assesses the nature and extent of archaeological remains, and examines the relationship between Native use of the site, previously known through the recovery of stone artifacts that relate to a precontact or prehistoric technology, and the trading post.

ABOUT THE AUTHOR

Donald W. Clark has been a curator of archaeology at the Canadian Museum of Civilization since 1968. A graduate of the University of Alaska in Fairbanks, he received his Ph.D. from the University of Wisconsin-Madison. His fieldwork has ranged from Kodiak Island in the Gulf of Alaska, to the Koyukuk River in northwestern Alaska, and across the Yukon to Great Bear Lake in the District of Mackenzie.

Mercury Series
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ISBN 0-660-14032-2

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